SERVICE MANUAL



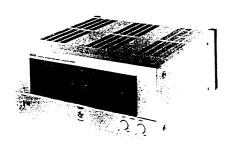
$\begin{array}{c} PS\text{-}200C \\ PS\text{-}120M \\ PS\text{-}200M \end{array}$

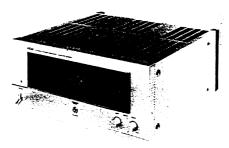


ALSO APPLICABLE TO BLACK PANEL MODEL



PS-200C





PS-120M

PS-200M

STEREO PRE-AMPLIFIER and STEREO POWER AMPLIFIERS

PS-200C PS-120M PS-200M

SECTION 1	SERVICE MANUAL	3
SECTION 2	PARTS LIST	57
SECTION 3	SCHEMATIC DIAGRAM	87

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SECTION 1

SERVICE MANUAL

TABLE OF CONTENTS

I.	TECHNICAL DATA	4
	1. MODEL PS-200C	4
	2. MODEL PS-120M	5
	3. MODEL PS-200M	5
П.	DISMANTLING OF UNIT	6
	1. MODEL PS-200C	6
	2. MODEL PS-120M (and PS-200M)	7
Ш.	CONTROLS	8
	1. MODEL PS-200C	8
	2. MODEL PS-120M (and PS-200M)	9
IV.	PRINCIPAL PARTS LOCATION	10
	1. MODEL PS-200C	10
	2. MODEL PS-120M	11
	3. MODEL PS-200M	12
v.	CIRCUIT OPERATION	13
	1. MODEL PS-200C	13
	2. MODEL PS-120M (and PS-200M)	15
VI.	LEVEL DIAGRAM	21
	1. MODEL PS-200C	21
	2. MODEL PS-120M (and PS-200M)	21
VII.	AMPLIFIER ADJUSTMENT	
	1. MODEL PS-200C	22
	2. MODEL PS-120M	23
	3. MODEL PS-200M	26
VIII.	CLASSIFICATION OF VARIOUS P.C BOARDS	28
	1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS	28
	2. MODEL PS-200C COMPOSITION OF VARIOUS P.C BOARDS	30
	3. MODEL PS-120M COMPOSITION OF VARIOUS P.C BOARDS	36
	A MODEL BS 200M COMPOSITION OF VARIOUS BC BOARDS	12

For basic adjustments, measuring methods, and operating principles, refer to GENERAL TECHNICAL MANUAL.

I. TECHNICAL DATA

1. MODEL PS-200C

INPUT SENSITIVITY/IMPEDANCE/ SIGNAL TO NOISE RATIO (IHF "A")		
PHONO 1 (MM)	2.5 mV/47 kohms/88 dB	
PHONO 2 (MM)	2.5 mV/33, 47, 100 kohms/88 dB	
PHONO 3 (MC)	0.07 mV/10 ohms/72 dB	
TUNER	150 mV/47 kohms/106 dB	
AUX 1/2	150 mV/47 kohms/106 dB	
TAPE PLAY 1/2	150 mV/47 kohms/106 dB	
OUTPUT LEVEL/IMPEDANCE		
TAPE REC 1/2	150 mV/600 ohms	
OUTPUT	1.5V/600 ohms	
RATED LOAD IMPEDANCE	1 kohms	
PHONO MAX. INPUT LEVEL (1 kHz)		
PHONO 1/2	450 mV	
PHONO 3	10 mV	
FREQUENCY RESPONSE		
TUNER/AUX 1 & 2/TAPE PLAY 1 & 2	0.8 Hz to 100 kHz ±1 dB	
PHONO 1/2 (RIAA CURVE DEVIATION)	30 Hz to 15 kHz ±0.2 dB	
PHONO 3 (RIAA CURVE DEVIATION)	30 Hz to 15 kHz ±0.2 dB	
TOTAL HARMONIC DISTORTION (20 Hz to 20 kHz)		
TUNER/AUX 1 & 2/TAPE PLAY 1 & 2	0.005% at output 1V	
(VOLUME MAX.)	0.002% at output 7V	
	0.005% at output 15V	
PHONO 1/2 (VOLUME MAX.)	0.005% at output 15V	
(VOLUME -20 dB)	0.005% at output 1.5V	
PHONO 3 (VOLUME MAX.)	0.005% at output 15V	
(VOLUME -20 dB)	0.005% at output 1.5V	
TONE CONTROL BASS	±9 dB at 100 Hz	
TREBLE	±9 dB at 10 kHz	
SUBSONIC FILTER	12 dB/oct. at 18 Hz	
CHANNEL SEPARATION (AUX 1/2)	70 dB (Shorted Circuit)	
POWER REQUIREMENTS	120V, 60 Hz for U.S.A. and Canada	
•	220V, 50 Hz for Europe except UK	
	240V, 50 Hz for UK and Australia	
	110V/220V/240V, 50/60 Hz internally switchable	
DIMENSIONS .	440(W) × 90(H) × 457(D)	
WEIGHT	7.5 kg	

2. MODEL PS-120M

RATED POWER OUTPUT	130 watts per channel, min. RMS, at 8 ohms from 20 Hz to 20 kHz with no more than 0.008% THD.
TOTAL HARMONIC DISTORTION	0.008% at rated power output
INTERMODULATION DISTORTION	0.008% at rated power output
SIGNAL TO NOISE RATIO (IHF "A")	115 dB
RESIDUAL NOISE (IHF "A"/8 OHMS)	0.2 mV
INPUT SENSITIVITY/IMPEDANCE	1V/47 kohms
DAMPING FACTOR (IHF)	350
REQUIRED LOAD IMPEDANCE	4 ohms to 16 ohms
FREQUENCY RESPONSE	DC to 100 kHz ±0.5 dB
SUBSONIC FILTER	12 dB/oct. at 18 Hz
POWER REQUIREMENTS	120V, 60 Hz for U.S.A. and Canada
	220V, 50 Hz for Europe except UK
	240V, 50 Hz for UK and Australia
	110/220/240V, 50/60 Hz internally switchable
DIMENSIONS	44(W) × 198(H) x 459(D) mm
WEIGHT	30 kg

3. MODEL PS-200M

RATED POWER OUTPUT	220 watts per channel, min. RMS, at 8 ohms from 20 Hz to 20 kHz with no more than 0.008% THD.
TOTAL HARMONIC DISTORTION	0.008% at rated power output
INTERMODULATION DISTORTION	0.008% at rated power output
SIGNAL TO NOISE RATIO (IHF "A")	115 dB
RESIDUAL NOISE (IHF "A"/8 OHMS)	0.2 mV
INPUT SENSITIVITY/IMPEDANCE	1V/47 mV
DAMPING FACTOR (IHF)	350
REQUIRED LOAD IMPEDANCE	4 ohms to 16 ohms
FREQUENCY RESPONSE	DC to 100 kHz ±0.2 dB
SUBSONIC FILTER	12 dB/oct. at 18 Hz
POWER REQUIREMENTS	120V, 60 Hz for U.S.A. and Canada
	220V, 50 Hz for Europe except UK
	240V, 50 Hz for UK and Australia
	110/220/240V, 50/60 Hz internally switchable for other countries.
DIMENSIONS	440(W) × 198(H) × 459(D) mm
WEIGHT	30 kg

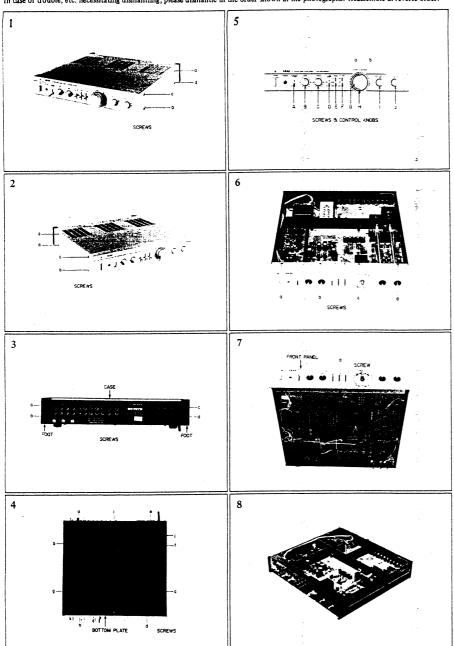
^{*} For improvement purposes, specifications and design are subject to change without notice.

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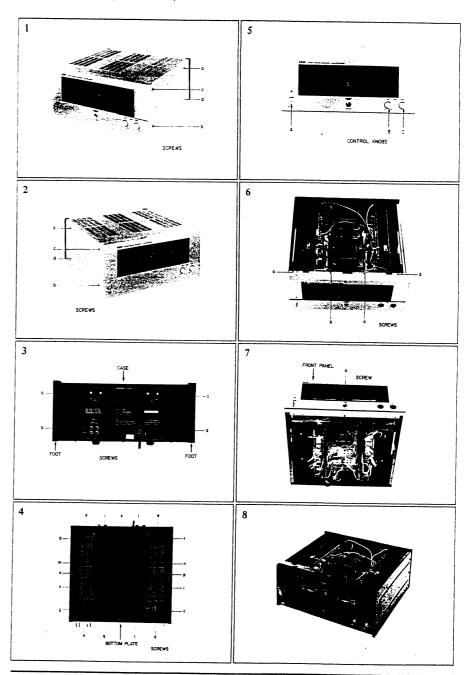
II. DISMANTLING OF UNIT

1. MODEL PS-200C

In case of trouble, etc. necessitating dismantling, please dismantle in the order shown in the photographs. Reassemble in reverse order.

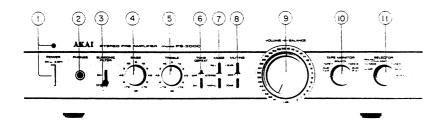


2. MODEL PS-120M (and PS-200M)



III. CONTROLS

1. MODEL PS-200C



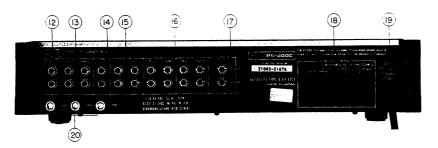
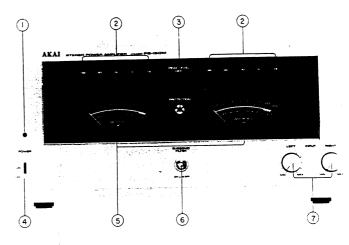


Fig. 1 Controls (PS-200C)

- 1. POWER SWITCH AND INDICATOR
- 2. HEADPHONE JACK
- 3. SUBSONIC FILTER
- 4. BASS TONE CONTROL
- 5. TREBLE TONE CONTROL
- 6. TONE SWITCH
- 7. MODE SWITCH
- 8. MUTING SWITCH
- 9. VOLUME AND BALANCE CONTROLS
- 10. TAPE MONITOR SWITCH

- 11. INPUT SELECTOR
- 12. CARTRIDGE IMPEDANCE SWITCH (MM2 Only)
- 13. PHONO TERMINALS
- 14. TUNER TERMINALS
- 15. AUX TERMINALS (2 set supplied)
- 16. TAPE 1 AND TAPE 2 SYSTEM REC/P.B TERMINALS
- 18. EXTRA AC OUTLETS (Some models are not equipped with this facility)
- 19. AC POWER CORD (Some models equipped with AC inlet)
- 20. GROUND TERMINALS FOR PHONO

2. MODEL PS-120M (and PS-200M)



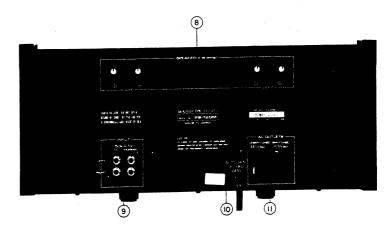


Fig. 2 Controls (PS-120M)

- 1. POWER INDICATOR
- 2. PEAK LEVEL LEDS (Light Emitting Diodes)
- 3. PROTECTION INDICATOR
- 4. POWER SWITCH
- 5. LEFT AND RIGHT CHANNEL PEAK LEVEL METERS
- 6. SUBSONIC FILTER
- 7. LEFT AND RIGHT INPUT LEVEL CONTROLS
- 8. SPEAKER SYSTEM TERMINALS
- 9. INPUT JACKS
- 10. POWER CORD (Some models have power cord inlets instead)
- 11. AC OUTLETS (Some models are not equipped with this facility)

IV. PRINCIPAL PARTS LOCATION

1. MODEL PS-200C

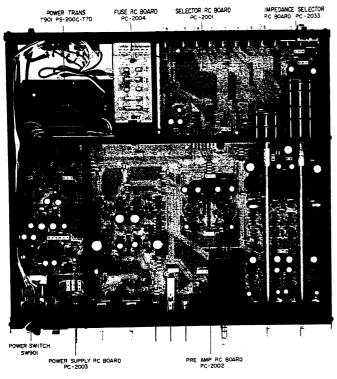


Fig. 3 Top View

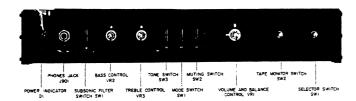


Fig. 4 Front View

2. MODEL PS-120M

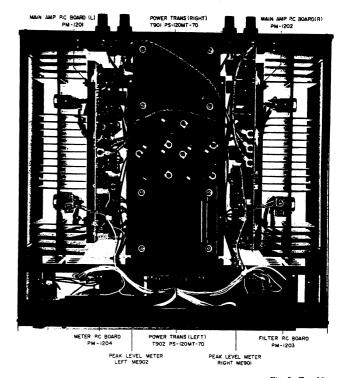


Fig. 5 Top View

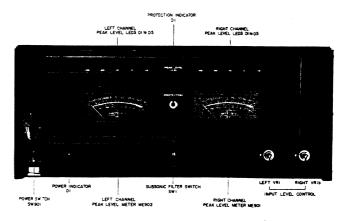


Fig. 6 Front View

3. MODEL PS-200M

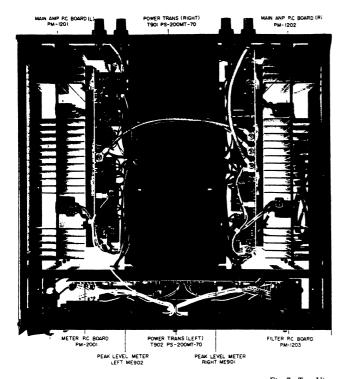


Fig. 7 Top View

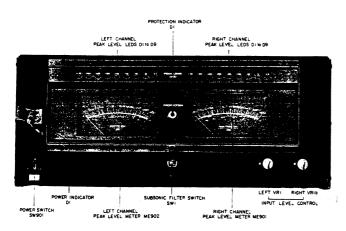


Fig. 8 Front View

V. CIRCUIT OPERATION

1. MODEL PS-200C

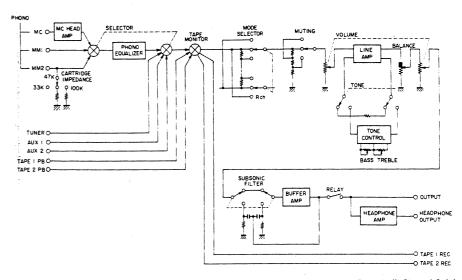


Fig. 9 Block Diagram (L Channel Only)

1) MC Head Amp

MC PHONO input's reference input is a low 0.07 mV. Therefore, a gain of approximately 30 dB at 1 kHz is obtained from the Head Amp to make the Equalizer Amp input equal to the MM type input.

The circuit is made up of high $h_{\rm fe}$, low noise transistors connected in parallel to obtain high gain in the first stage. The pure complimentary push-pull last stage uses transistors with good linearity.

The dynamic range of the Head Amp deserves attention. The Head Amp is a flat amp with no RIAA characteristics, unlike the Equalizer Amp. The output of the cartridge increases with frequency with 1 kHz as reference. For this reason, even if sufficient dynamic range is obtained in the low and mid frequencies, there may be clipping in the high frequency. It is therefore necessary that the Head Amp does not saturate at the level at least where clipping occurs in the Equalizer Amp. The maximum allowable input voltage of this model is 10 mV at 1 kHz.

2) Equalizer Amp

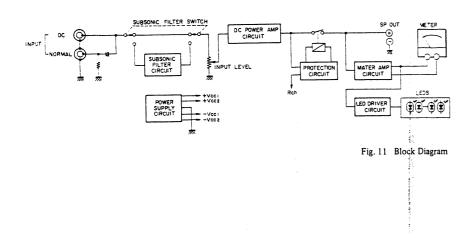
The circuit is composed of a differential amplifier with cascade connected low noise one-chip dual FET in the first stage. Also, by using a constant current power source as a common source, CMRR (Common Mode Rejection Ratio) is improved. Distortion is also circumscribed by the differential amplifier in the next stage. The last stage is a Darlington connected pure complimentary push-pull circuit.

The NFB type equalizer features a stable frequency response and receives very little influence from heat, etc. By using a high precision part for the equalizer element, RIAA deviation is held within ±0.2 dB from the standard value with frequency response range of 30~15 kHz for this model.

The circuit operation of the differential amplifier in the first stage is described below.

The circuit is shown in Fig. 10. TR1a is connected in series to TR2 and TR1b is connected in series to TR3. Also a constant voltage is applied to the common gate of TR2 and TR3 from the resistance

2. MODEL PS-120M and PS-200M



1) Input Circuit

These models are equipped with two terminals, DC and NORMAL, for input. By using the "DC" input, they become DC amplifiers without input coupling condenser. By using the "NORMAL" input, the coupling condenser cuts off the DC part. Also when the Subsonic Filter Switch is turned ON, the low range of 18 Hz or less is reduced by 12 dB/oct.

2) DC Power Amplifier Circuit

The signal from the input circuit passes the Input Level Control and enters the DC amplifier system's Power Amplifier Input. To explain what is meant by the DC amplifier system:

Condensers are used in circuits to obtain certain characteristics for DC operation, AC gain, and impedance when making an amplifier. However, condenser reactance increases in reverse proportion to the signal frequency and ultra low signals cannot be handled in AC. In circuit using many condensers, condenser reactance can be thought of as 0 in the midrange signals but in the ultra low range, condenser

reactance is thought of as unlimited. When the midrange and the ultra low range equivalent circuits are compared; the gain, input and output impedances at each stage, and distortion, etc., changes widely.

In DC amplifiers, the condensers in the circuits, as above, are all removed. The same amplitude and impedance, etc., can be obtained in DC or AC in this design. In addition, the first stage differential transistor, FET pairing, and temperature balance, etc., becomes absolute necessity in the DC amplifiers. Next, although circuit-constructed, cascade connected differential amplifier used in PS-200C is used for the first stage. The voltage gain is obtained from the transistor differential amplifier in the next stage, and the input to the next stage is obtained from each collector.

The signals from the TR10 and TR11 collectors pass the pure complimentary push-pull TR19 and 20 and TR21 and 22, respectively. They are current amplified by the parallel push-pull power transistors and connected to SP OUT.

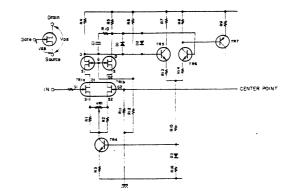


Fig. 10 Input Circuit of The Differential Amplifier

split of R6 and R12 regardless of the input signal. The circuit is cascade connected in this way and a one-chip dual FET is used for TR1.

There circuits have advantages such as DC drift decrease, current noise decrease and improvement in frequency response characteristics.

Then the gate potential of TR1a increases, the impedance between TR1a drain and source decreases, and the drain current increases. Since TR1 is mode up of dual FET differential amplifier, TR1b drain current decreases proportionately to TR1a drain current increase. This causes TR1a drain potential to decrease and TR1b drain potential to increase. Since TR2 and TR3 gate potentials are constant, TR2 and TR3 VGs vary due to changes in TR1a and TR1b drain potentials. TR2 drain current increases and TR3 drain current decreases due to this variance.

When the gate potential of TR1a decreases, the impedance between TR1a drain and source increases and the drain current decreases. TR1b drain current thereby increases proportionately to TR1a decrease. TR1a drain potential increases and TR1b drain potential decreases as a result. On the other hand TR2 $V_{\rm GS}$ decreases and TR3 $V_{\rm GS}$ increases to increase the TR2 drain potential by TR2 drain current decrease and to decrease the TR3 drain potential by the TR3 drain potential by the TR3 drain current increase.

In other words, TR1a gate signal input appears in reverse phase, equal voltage signal at R4 and R5 load resistors. This signal enters between the TR5 and TR6 bases as differential amplifier inputs of those two. By this, the output between the two drains in the first stage becomes a push-pull operation, and the distortion is minimized.

Since the circuit structure is two differential amplifiers used together, total CMRR is a product of the first stage CMRR and the second stage CMRR.

Even if there is an increase in the drain current, or an in-phase input due to noise, etc., any collector potential change is held down to result in a stable center potential and a decreased DC drift.

The output from the second stage differential amplifier is an unbalanced type taken out only from the TR6 collector. It is phase inverted in the next stage and pulls out the equalizer amplifier output signal as a push-pull circuit.

3) Line Amplifier

This circuit is almost exactly the same circuitconstructed flat amplifier as the equalizer amplifier without the NFB equalizer circuit. By equipping interlocking volumes on the input and the output sides, S/N ratio is improved when the volume is turned low.

4) Output Circuit

The output from the line amplifier passes the balance control, volume control, subsonic filter switch and is supplied to the buffer amplifier.

The buffer amplifier is an impedance conversion circuit used to prevent crossing between the circuit. Consequently, it requires high input impedance, low output impedance, no distortion, wide dynamic range, flat frequency response characteristics and low noise, etc. These are fulfilled in this model by using the pure complimentary SEPP type emitter follower circuit.

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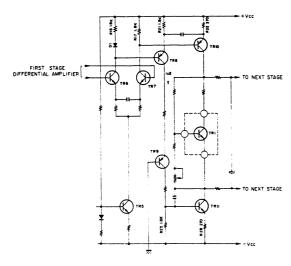


Fig. 12 Pre Driver Circuit

3) Pre Driver Circuit (Refer to Fig. 12)

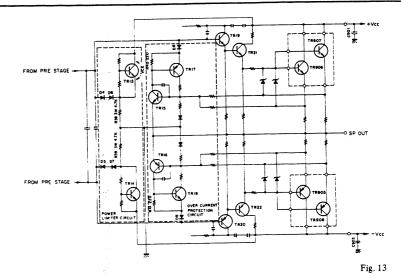
The negative phase signals from the first stage differential amplifier (refer to PS-200C circuit explanation) enter the bases of TR6 and TR7 and the negative phase outputs from each collector become base inputs to the transistors of the next stage.

Although the signal from the TR7 collector becomes the base input of TR10, the signal from the TR6 collector must become TR11 base input to have the push-pull circuitry. Voltage between two sides of R17 (1.8 k) is supplied to TR10 base bias. TR8 is biased by voltage between two sides of R16 (1.8 k) + D1 and is supplied with IC8. And since V_{BF} of TR8

is approximately the same voltage as the D1 voltage drop, R21 (1.8 k) is supplied with the same voltage as the voltage between two sides of R16 = R17 (1.8 k).

This IC8 passes the cascade connected TR9 and flows to R25 (1.8 k).

Since R21 and R25 resistor values are equal, TR11 base is supplied with an equal potential bias as the TR10 base. As explained above, TR7 collector signal enters the TR10 base, TR6 collector signal appears in the voltage between two sides of R25 as a change in IC8 and enters TR11 base after which it is passed to the next stage by the push-pull circuitry.



4) Over Current Protection Circuit (Refer to Fig. 13)

When the speaker terminal of the power amplifier is shortcircuited or when the load impedance equivalently becomes too low due to too many speaker connections, the output stage transistor breaks down because of excessive power consumption by the transistors or of excess current. The circuit shown in Fig. 13 composed of TR15 and 17 and TR16 and 18 prevents this damage. TR15 and 17 circuit operates for excessive + signal current and TR16 and 18 operate for excessive - signal.

The case when there is a current overflow of + signal will be explained here. Ordinarily, TR15 base potential and the emitter potential are almost equal and TR15 is OFF. When the load RL becomes lower than the power amplifier's specified load or is short-circuited, excess current flows to the output stage transistor. This causes the base potential of TR15 to become greater than the emitter potential and TR15 turns ON.

When this happens, the signal to TR19 passes D8 and R40 and is dropped to the center (node) point. The output stage transistor, therefore, stops receiving the signal and the excess current does not flow.

Also when TR15 is turned ON, TR17 base potential is decreased to turn on TR17. TR15 base potential is thereby further increased to make the operation fullproof. Also when TR15 is turned ON, relay RL1 (see Fig. 14) turns OFF and the power amplifier output is disconnected from the speaker.

TR16 and 18 operate in the same way for excess signal current to protect the output stage transistor.

5) Power Limiter Circuit (Refer to Fig. 13)

This circuit is to protect the output stage transistor at excessive input. When the input signal voltage to TR19 and TR20 exceeds a certain point, it is limited and prevents excessive input to the output stage transistor. Only the case of positive signal input will be explained here.

There is very little voltage amplification because TR19, TR21, and the output stage transistor are emitter followers at current amplification. In other words, the TR19 base is supplied with the same voltage as speaker output voltage. So the maximum voltage to appear at the output is $+V_{\rm CC}$. Signals with voltage of no less than approximately 2.1V or 3 diode voltage drops less than this $+V_{\rm CC}$ are limited by TR13, D4, and D6.

To explain the circuit operation, first, $+V_{CC}$ is added to the TR13 collector. The voltage between TR13 collector and emitter has a potential of 5 diode voltage drops or approximately 3.5V according to the design, and a voltage 3.5V lower than C901 positive voltage appears at the emitter.

Next, taking a look at the signal voltage, we find that when the value after subtracting the voltage drops of D4 and D6 (approximately 0.7V × 2) is greater than TR13 emitter potential, the signal passes R38 and is grounded to be limited. By the above operation, when there is a voltage no less than the value approximately 2.1V (Voltage drops of D4 and D6 subtracted from TR13 V_{CE}) less than +V_{CC}, the signal passes D4+D6+R38 and is grounded to limit the output.

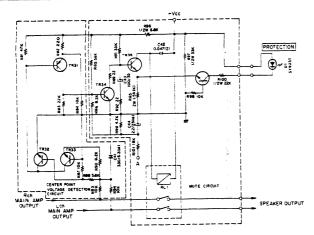


Fig. 14

6) Mute Circuit (Refer to Fig. 14)

When the power of the amplifier is turned on or off, pop and distortion noise generate to damage the speakers or produce unpleasant sound. The mute circuit of Fig. 14 prevents these.

When the power is ON, point A is supplied with a diode rectified negative pulse current and charges C44 through R101. While C44 is being charged, TR34 base is supplied with the potential from +V_{CC} and turns ON. On the otherhand, TR35 base potential decreases to turn OFF. At this condition since TR35 collector current does not flow to R95, TR36 base potential becomes higher than the emitter potential and TR36 is turned ON. When TR36 is turned ON. collector current flows through R100 and R95 and the PROTECTION INDICATOR D1 illuminates. When C44 is finished being charged, TR34 base becomes negative potential and TR34 turns off. Then the base current of TR35 turns on TR35 after charging the time constant circuit. Relay RL1 is driven by the TR35 collector current and the main amplifier output is connected to the speaker output. In this conditions, TR36 emitter potential becomes higher than the base potential so that TR36 turns OFF and the Protection Indicator D1 lights off.

When the power is OFF, point A is not supplied with the pulse current.

The C44 charge, therefore, discharges through R99 and raises the base potential of TR34 to turn ON TR34. TR35 base potential then decreases to turn off TR35 and the relay RL1 also turns off. When the TR35 collector current stops flowing, TR36 base potential becomes higher than the emitter potential and turns ON to light the PROTECTION INDICATOR D1. However, since the potential of +V_{CC} gradually decreases, TR36 base potential decreases to

turn OFF and the PROTECTION INDICATOR D1 also turns off.

7) Center (node) Point Voltage Detection Circuit (Refer to Fig. 14)

When there is DC potential at the power amplifier's speaker output terminal, the DC will flow to the speaker in the case of OCL circuitry and damage the speakers. For this reason, when there is a DC potential, a circuit is necessary to detect the potential to turn off the mute circuit relay RL1 and cut off the speaker from the power amplifier output. This circuit is called a center (node) point voltage detection circuit and is shown in Fig. 14.

Ordinarily the center (node) point is 0V and TR32 and 33 are OFF. C41 is a non-pole condenser and is grounded that there is no effect from the AC signal. But when there is a positive DC potential at the center point, that potential positively charges C41 on the side opposite to the ground. Consequently, TR32 is base biased and is turned ON. TR31 base becomes ground potential and TR31 turns ON. When TR31 turns ON, TR34 base potential is increased, TR34 turns ON, and TR35 base potential decreases. When TR35 is turned OFF, relay RL1 turns OFF and the power amplifier output is disconnected from the speakers.

Next, if there is a negative DC potential at the center point, that potential negatively charges C41 on the opposite side to the ground and TR33 emitter potential becomes lower than the base potential to turn ON TR33. Accordingly, TR31 base becomes ground potential and relay RL1 turns off as mentioned earlier and the power amplifier is cut off from the speaker.

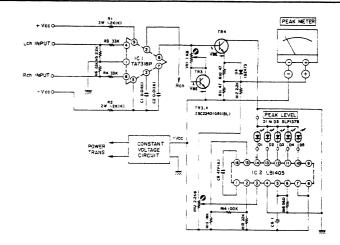


Fig. 15 Meter Amplifier and LED Drive Circuit

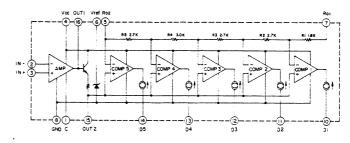


Fig. 16 LB1405 Block Diagram

8) Meter Amplifier and LED Drive Circuit (Refer to Fig. 15, 16)

The signal from the speaker output enters the input of Meter Amplifier IC1 and comes out of terminals 2 and 8 as output. The peak meter used in these models requires approximately 40 mA of electric current. Since the output current from IC1 is not enough, the output from IC1 is current amplified by the TR4 emitter follower circuit to drive the meter. Also because of the large current, constant voltage circuit, TR1 and TR2, supplies the current. TR3 equalizes TR4 $V_{\rm BE}$ and TR3 $V_{\rm BE}$ and equalizes $V_{\rm BE}$ changes due to base current changes for good

linearity to the meter input.

D4 assists in obtaining good linearity of the meter itself. When the signal voltage increases to a certain point, D4 provides continuity to increase the meter drive current and compensates the linearity.

IC LB1405 is used for the LED drive. Fig. 16 shows the block diagram. The signal entering terminal 3 is amplified and is passed to each comparator. A resistance divided constant voltage for each level is supplied to one side of the comparators. The IC compares each input signal with this constant voltage and detects it to drive the LED of each level.

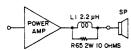


Fig. 17

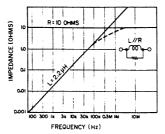


Fig. 18

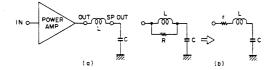


Fig. 19

9) L1 and R65 Operation (Refer to Fig. 17 to 19)

As shown in Fig. 17, most amplifiers have an inductance or a resistor between the output and the speaker. The inclusion has several advantages.

Considering the negative effect when L and R is inputted, we find that the power amplifier output impedance increases higher the frequency in the case of inductance. This negative effect is shown in Fig. 18. However, as can be seen in the figure, the effect of the inductance is merely 0.014 ohm at 1 kHz and 1.4 ohm even at 100 kHz, and is hardly a problem.

Considering the positive side, we find that the impedance seen from the load terminal becomes extremely low at high frequencies due to such factors as speaker cord capacitive components and L-C networks for speaker frequency divider. However,

the load impedance seen from the power amplifier output can maintain a value above a certain level due to the effect from L and R added in series to the load terminal.

Also the addition of L and R serves as a buffer when the power amplifier begins high range oscillation as a result of poor grounding of the Pin jack or phase difference caused by capacitance load at the output stage, etc. When something with a capacitance component is connected to the load in this way, a series resonance circuit is constructed as in Fig. 19(a) and the load impedance becomes 0 at the resonance point. But because of the operation of R connected parallel to L. the resonance circuit is damped and looks as if a pure resistor has been added equivalently as in Fig. 19(b), and the load impedance does not become zero even at the resonance point.

VI. LEVEL DIAGRAM

1. MODEL PS-200C

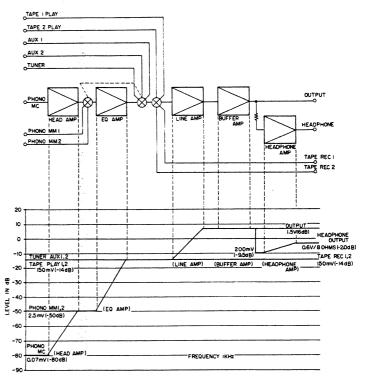


Fig. 20 Level Diagram PS-200M

2. MODEL PS-120M and PS-200M

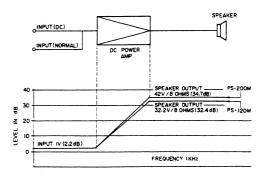


Fig. 21 Level Diagram PS-120M and PS-200M

1. MODEL PS-200C (Refer to Fig. 22)

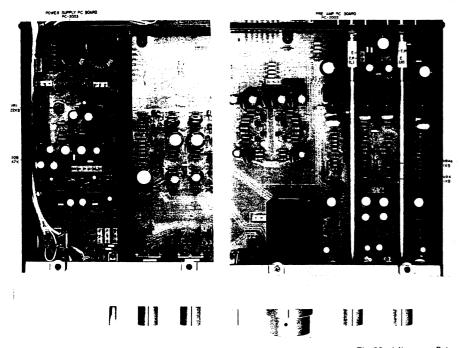


Fig. 22 Adjustment Point

Step	Adjustment Item	Measuring Instrument Connection	Adjustment Point	Result	Remarks
1	DC Power Supply Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R28 and Ground	VR1 22 kB (Power Supply P.C Board)	42.0 V	,
2	L ch Center Off-set Voltage Adjustment	DC Voltmeter or Digital Voltmeter between T.P (L) and Ground	VR4 1 kB (Pre Amp P.C Board)	0 ± 0.5 V	OK if 0 ± 0.5 V at the beginning of adjustment
3	R ch Center Off-set Voltage Adjustment	DC Voltmeter or Digital Voltmeter between T.P (R) and Ground	VR4b 1 kB (Pre Amp P.C Board)	0 ± 0.5 V	beginning of adjustment

Chart-1

2. MODEL PS-120M (Refer to Figs. 23, 24)

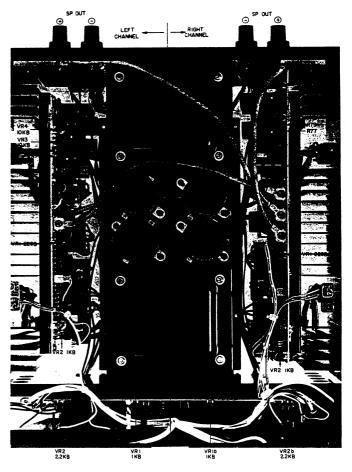


Fig. 23 Adjustment Point

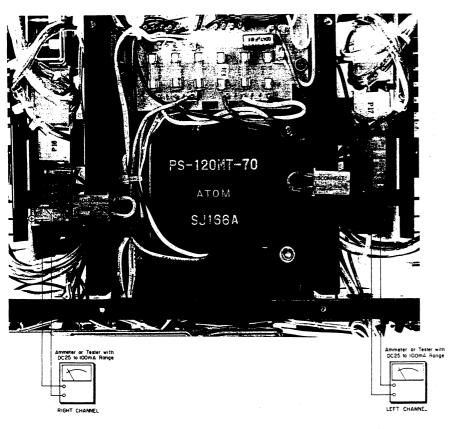


Fig. 24 Idling Current Adjustment

Step	Adjustment Item	Measuring Instrument Connection	Adjustment Point	Result	Remarks
1	L ch -DC Power Supply Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R79 and Ground	VR4 10 kB (Main Amp P.C Board (L))	-62.0 V	Refer to NOTE 2.
2	L ch +DC Power Supply Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R77 and Ground	VR3 10 kB (Main Amp P.C Board (L))	+62.0 V	Refer to NOTE 2.
3	L ch Center Off-set Voltage Adjustment	DC Voltmeter or Digital Voltmeter between L ch SP OUT ⊕ and ⊖	VR1 220 B (Main Amp P.C Board (L))	0 ± 0.5 V	OK if 0 ± 0.5 mV at the beginning of adjustment
4	L ch Idling Current Adjustment	DC Ammeter or Tester between P15 ⊕ and ⊖	VR2 1 kB (Main Amp P.C Board (L))	20 mA	Refer to Fig. 7 and NOTE 3.
5	R ch -DC Power Supply Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R79 and Ground	VR4 10 kB (Main Amp P.C Board (R))	-62.0 V	Refer to NOTE 2.
6	R ch +DC Power Supply Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R77 and Ground	VR3 10 kB (Main Amp P.C Board (R))	+62.0 V	Refer to NOTE 2.
7	R ch Center Off-set Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R ch SP OUT ⊕ and ⊖	VR1 220 B (Main Amp P.C Board (R))	0 ± 0.5 mV	OK if 0 ± 0.5 mV at the beginning of adjustment
8	R ch Idling Current Adjustment	DC Ammeter or Tester between P14 ⊕ and ⊖	VR2 1 kB (Main Amp P.C Board (R))	20 mA	Refer to Fig. 7 and NOTE 3.
9	L ch Meter Sensitivity Adjustment	AC Voltmeter between L ch SP OUT ⊕ and ⊖	VR1 1 kB (Meter P.C Board)	Meter indicates 120 W	Input 1 kHz sine wave & adjust the input level until the AC Voltmeter reads 31.0 V. Refer to NOTE 4.
10	L ch LED Sensitivity Adjustment	AC Voltmeter between L ch SP OUT \oplus and \ominus	VR2 2.2 kB (Meter P.C Board)	output level wir adjust VR2 so that SP output of	ne wave, control the th the input level, and that 0 dB LED will go on 31.0V (120W) and off V). Refer to NOTE 4.
11	R ch Meter Sensitivity Adjustment	AC Voltmeter between R ch SP OUT ⊕ and ⊖	VR1b 1 kB (Meter P.C Board)	Meter indicates 120 W	Input 1 kHz sine wave & adjust the input level until the AC Voltmeter reads 31.0 V. Refer to NOTE 4.
12	R ch LED Sensitivity Adjustment	AC Voltmeter between R ch SP OUT ⊕ and ⊖	VR1b 2.2 kB (Meter P.C Board)	output level with adjust VR2 so that SP output of	e wave, control the h the input level, and hat 0 dB LED will go on 31.0V (120W) and off '). Refer to NOTE 4.

Chart-2

NOTES: 1. Connect and disconnect a measuring equipment only after the power has turned off for several seconds.

- 2. When connecting the Voltmeter for Steps 1, 2, 5 and 6, do not shortcircuit positive and negative power
- 3. When connecting the DC Ammeter for Steps 4 and 8, do not touch the angle fixing the P.C Board.
- 4. Do adjustments in steps 9 to 12 with the input in only one channel.

3. MODEL PS-200M (Refer to Figs. 23, 24)

Step	Adjustment Item	Measuring Instrument Connection	Adjustment Point	Result	Remarks
1	L ch -DC Power Supply Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R79 and Ground	VR4 10 kB (Main Amp P.C Board (L))	-73.0 V	Refer to NOTE 2.
2	L ch +DC Power Supply Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R77 and Ground	VR3 10 kB (Main Amp P.C Board (L))	+73.0 V	Refer to NOTE 2.
3	L ch Center Off-set Voltage Adjustment	DC Voltmeter or Digital Voltmeter between L ch SP OUT ⊕ and ⊖	VR1 1 kB (Main Amp P.C Board (L))	0 ± 0.5 mV	OK if 0 ± 0.5 mV at the beginning of adjustment
4	L ch Idling Current Adjustment	DC Ammeter or Tester between P15 ⊕ and ⊖	VR2 1 kB (Main Amp P.C Board (R))	20 mA	Refer to Fig. 7 and NOTE 3.
5	R ch -DC Power Supply Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R79 and Ground	VR4 10 kB (Main Amp P.C Board (R))	-73.0 V	Refer to NOTE 2.
6	R ch +DC Power Supply Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R77 and Ground	VR3 10 kB (Main Amp P.C Board (R))	; +73.0 V	Refer to NOTE 2.
7	R ch Center Off-set Voltage Adjustment	DC Voltmeter or Digital Voltmeter between R ch SP OUT ⊕ and ⊖	VR1 220 B (Main Amp P.C Board (R))	0 ± 0.5 mV	OK if 0 ± 0.5 mV at the beginning of adjustment
8	R ch Idling Current Adjustment	DC Ammeter or Tester between P14 ⊕ and ⊖	VR2 1 kB (Main Amp P.C Board (R))	20 mV	Refer to Fig. 7 and NOTE 3.
9	L ch Meter Sensitivity Adjustment	AC Voltmeter between L ch SP OUT ⊕ and ⊖	VRI I kB (Meter P.C Board)	Meter indicates 200 W	Input 1 kHz sine wave & adjust the input level until the AC Voltmeter reads 40.0 V. Refer to NOTE 4.
10	L ch LED Sensitivity Adjustment	AC Voltmeter between L ch SP OUT ⊕ and ⊖	VR2 2.2 kB (Meter P.C Board)	output level w adjust VR2 so at SP output of	ne wave, control the ith the input level, and that 0 dB LED will go on of 40.0V (200W) and off W). Refer to NOTE 4.
11	R ch Meter Sensitivity Adjustment	AC Voltmeter between R ch SP OUT ⊕ and ⊖	VR1b 1 kB (Meter P.C Board	Meter indicates 200 W	Input 1 kHz sine wave & adjust the input level until the AC Voltmeter reads 40.0 V. Refer to NOTE 4.

Step	Adjustment Item	Measuring Instrument Connection	Adjustment Point	Result	Remarks
12	R ch LED Sensitivity Adjustment	AC Voltmeter between R ch SP OUT ⊕ and ⊖	VR2b 2.2 kB (Meter P.C Board)	output level wit adjust VR2 so that SP output of	e wave, control the h the input level, and hat 0 dB LED will go on 40.0 V (200 W) and off '). Refer to NOTE 4.

Chart-3

- NOTES: 1. Connect and disconnect a measuring equipment only after the power has turned off for several seconds.
 - 2. When connecting the Voltmeter for Steps 1, 2, 5 and 6, do not shortcircuit positive and negative power
 - 3. When connecting the DC Ammeter for Steps 4 and 8, do not touch the angle fixing the P.C Board.
 - 4. Do adjustments in steps 9 to 12 with the input in only one channel.

VIII. CLASSIFICATION OF VARIOUS P.C BOARDS

1. P.C BOARD TITLES AND IDENTIFICATION NUMBERS

1) Model PS-200C

P.C Board Title	P.C Board Number
Selector P.C Board	PC-2001
Pre Amp P.C Board (Old Type)	PC-2002
Pre Amp P.C Board (B) (New Type)	PC-2056
Power Supply P.C Board	PC-2003
Impedance Selector P.C Board	PC-2033
LED P.C Board (B)	PM-1252
Fuse P.C Board (U) (U/T)	PC-2004
Fuse P.C Board (C) (CSA, AAL)	PC-2034
Fuse P.C Board (E) (CEE, UK)	PC-2035

Chart-4

2) Model PS-120M

P.C Board Title	P.C Board Number
Main Amp P.C Board (L)	PM-1201
Main Amp P.C Board (R)	PM-1202
Filter P.C Board	PM-1203
Meter P.C Board	PM-1204
Temp Compensation P.C Board	PM-1249
LED P.C Board (A)	PM-1250
LED P.C Board (B)	PM-1252
Fuse P.C Board (U) (U/T)	PM-1205
Fuse P.C Board (C) (CSA, AAL)	PM-1248
Fuse P.C Board (E) (CEE, UK)	PM-1251
Relay Terminal P.C Board	PM-1247

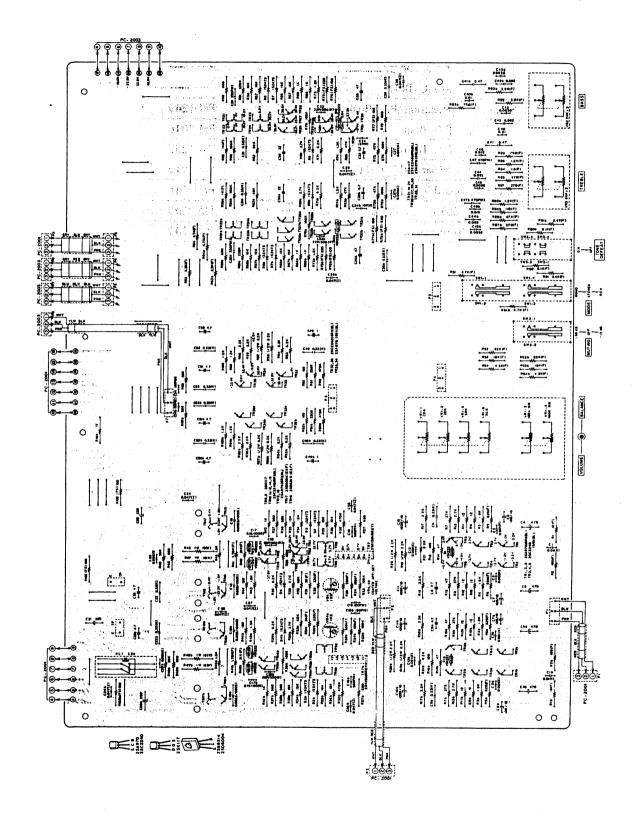
Chart-5

3) Model PS-200M

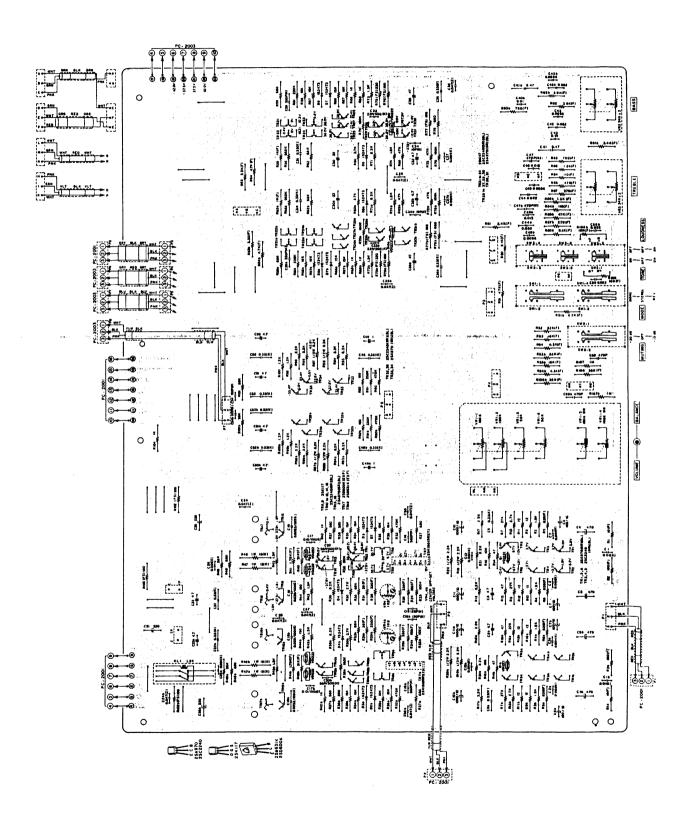
P:C Board Title	P.C Board Number
Main Amp P.C Board (L)	PM-1201
Main Amp P.C Board (R)	PM-1202
Filter P.C Board	PM-1203
Meter P.C Board	PM-2001
Temp Compensation P.C Board	PM-1249
LED P.C Board (C)	PM-2016
LED P.C Board (B)	PM-1252
Fuse P.C Board (U) (U/T)	PM-2017
Fuse P.C Board (C) (CSA, (AAL)	PM-2018
Fuse P.C Board (E) (CEE, UK)	PM-2019
Relay Terminal P.C Board	PM-1247

Chart-6

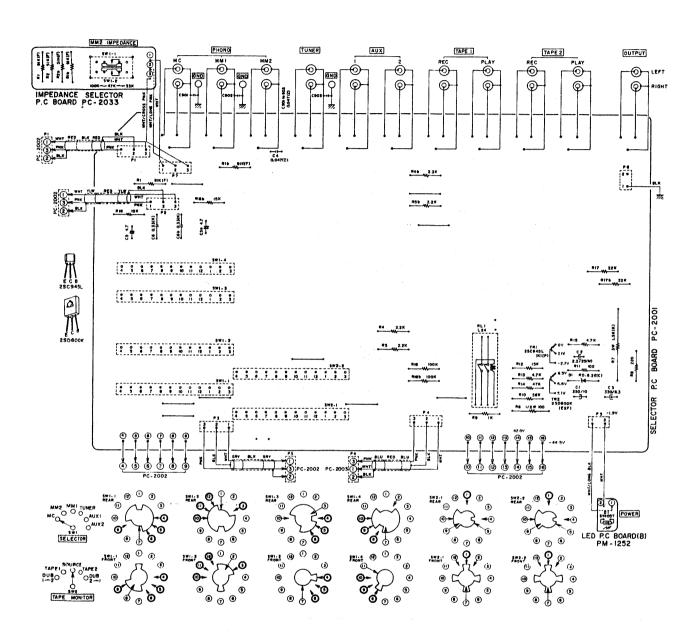
2. MODEL PS-200C COMPOSITION OF VARIOUS P.C BOARDS 1) PRE AMP P.C BOARD PC-2002 (Old Type)



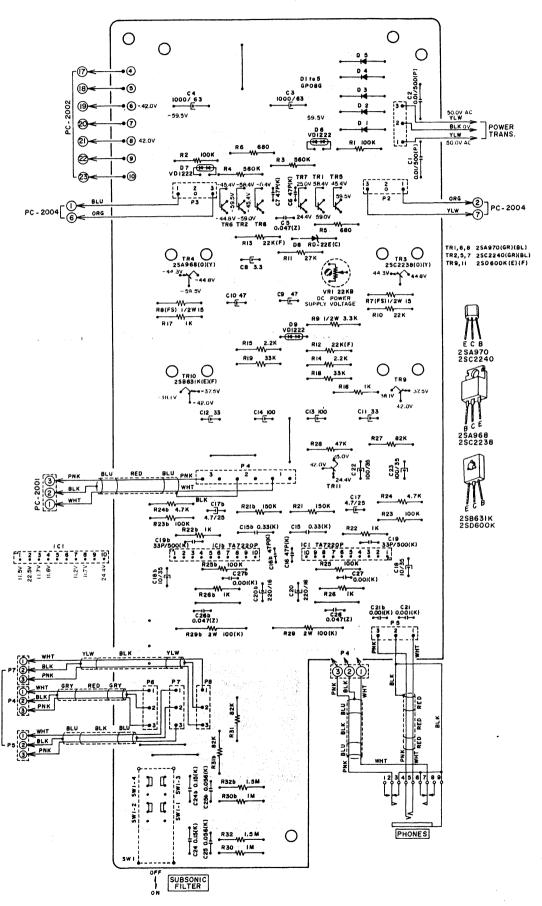
2) PRE AMP P.C BOARD (B) PC-2056 (New Type)



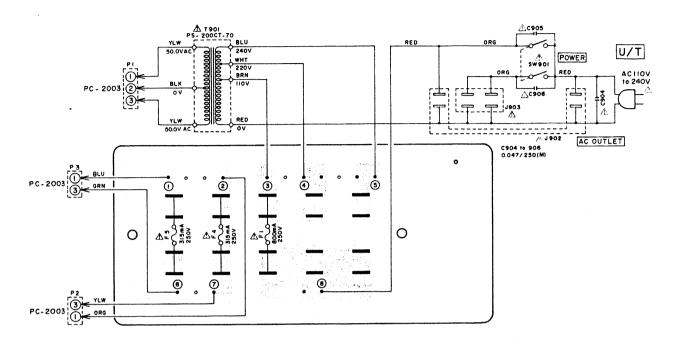
3) SELECTOR P.C BOARD PC-2001, IMPEDANCE SELECTOR P.C BOARD PC-2033 AND LED P.C BOARD (B) PM-1252



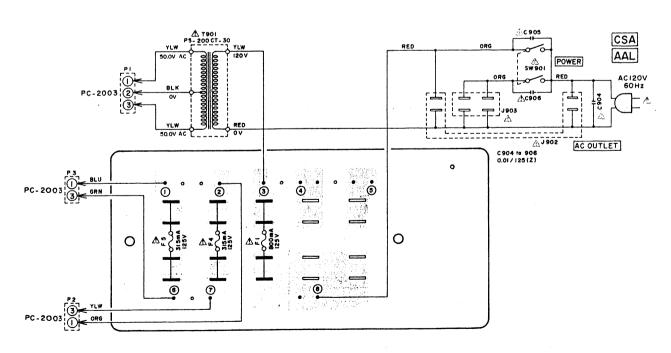
4) POWER SUPPLY P.C BOARD PC-2003



5) FUSE P.C BOARD (U) PC-2004 (U/T)



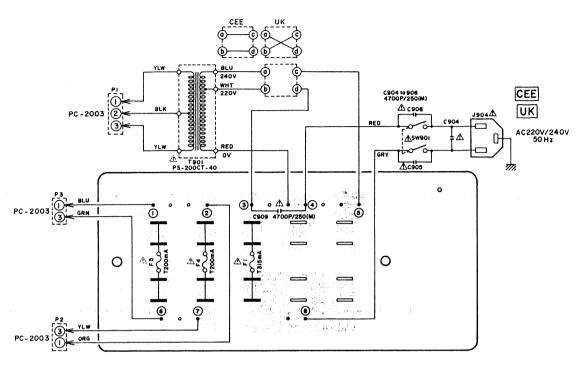
6) FUSE P.C BOARD (C) PC-2034 (CSA, AAL)



WARNING: AUNICATES SAFETY CHITICAL COMPONENTS FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT. ALL INDIOU LES COMPOSANTS CRITIQUES DE SÚRETE POUR MAINTENIR LE DEBRE DE SECURITO DE L'APPAREIL NE SÉMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CHI FORIG POUN LA SECURIT

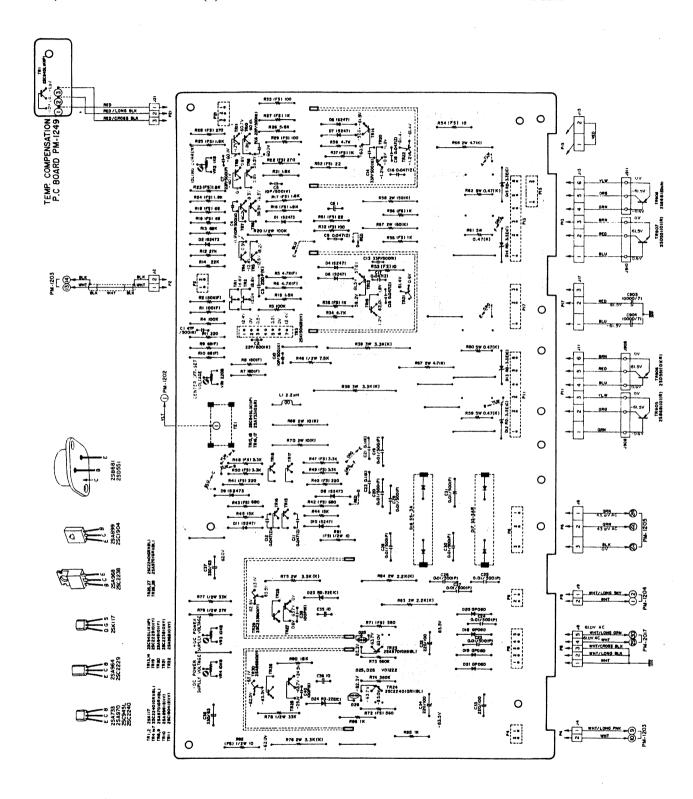
7) FUSE P.C BOARD (E) PC-2035 (CEE, UK)



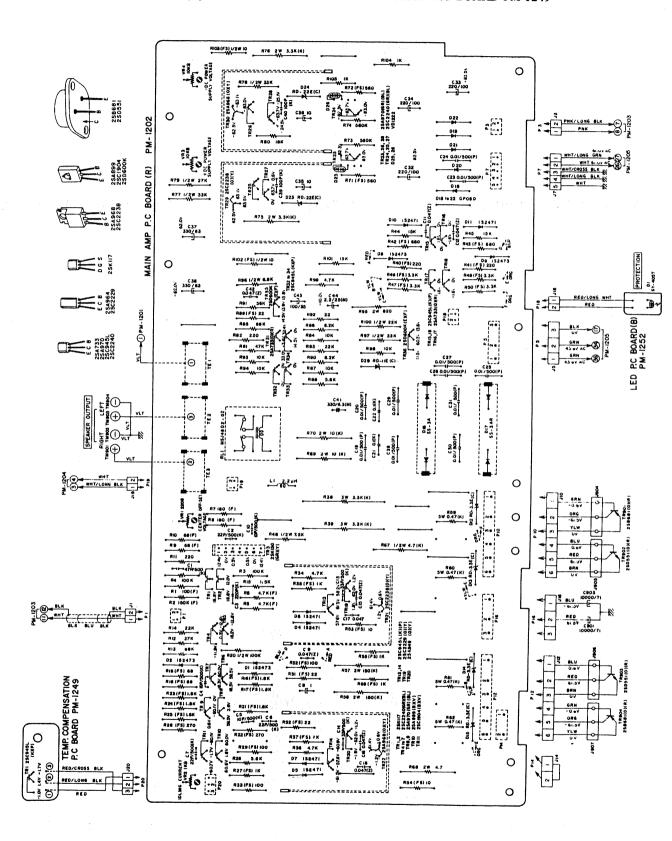
WARRING ADMINISTED SAFETY CRITICAL COMPONENTS FOR CONTINUED BAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS

AVERTISSEMENT: ALL INDIGULES COMPOSANTS CRITIQUES DE SURETÉ, POUR DEGRE DE SECURITE DE L'APPAREL NO. REMPA AGER LES COMPOSANTS DONT "E FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE AUF PAR DES PIECES RECOMMANDIES PAIL LE FABRICANT

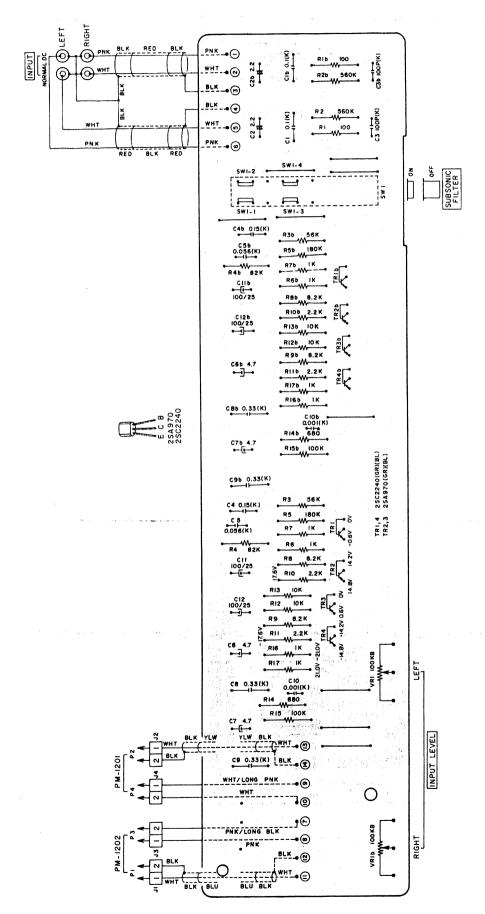
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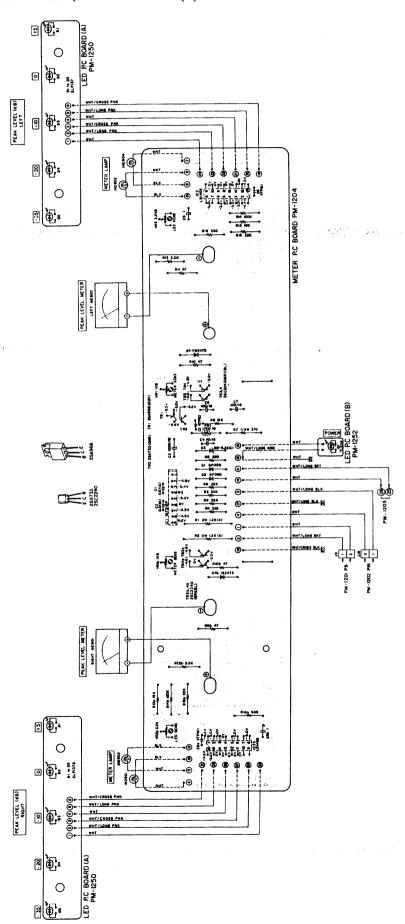
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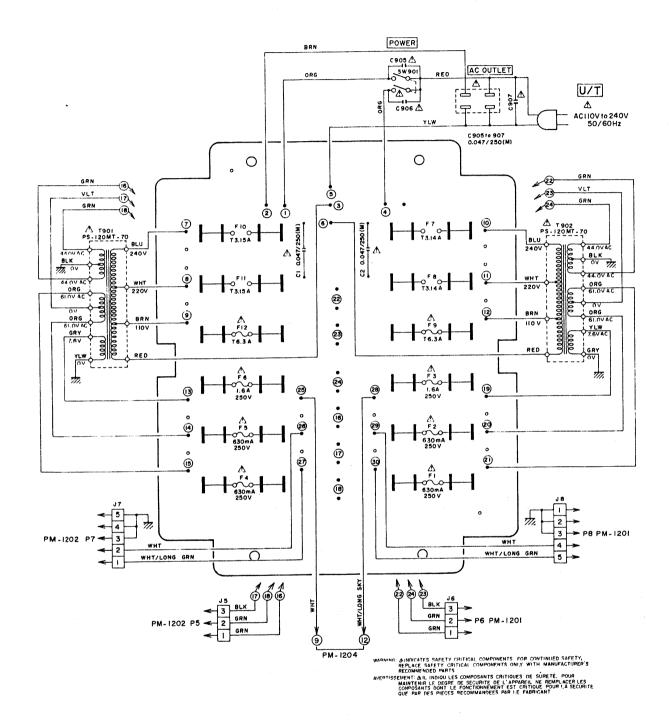
3) FILTER P.C BOARD PM-1203



4) METER P.C BOARD PM-1204, LED P.C BOARD (A) PM-1250 AND LED P.C BOARD (B) PM-1252

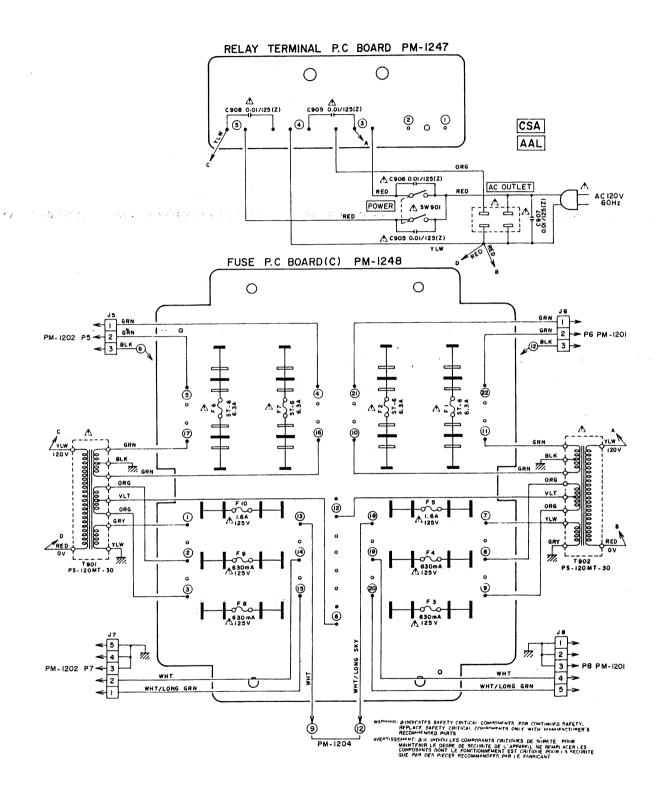


5) FUSE P.C BOARD (U) PM-1205 (U/T)

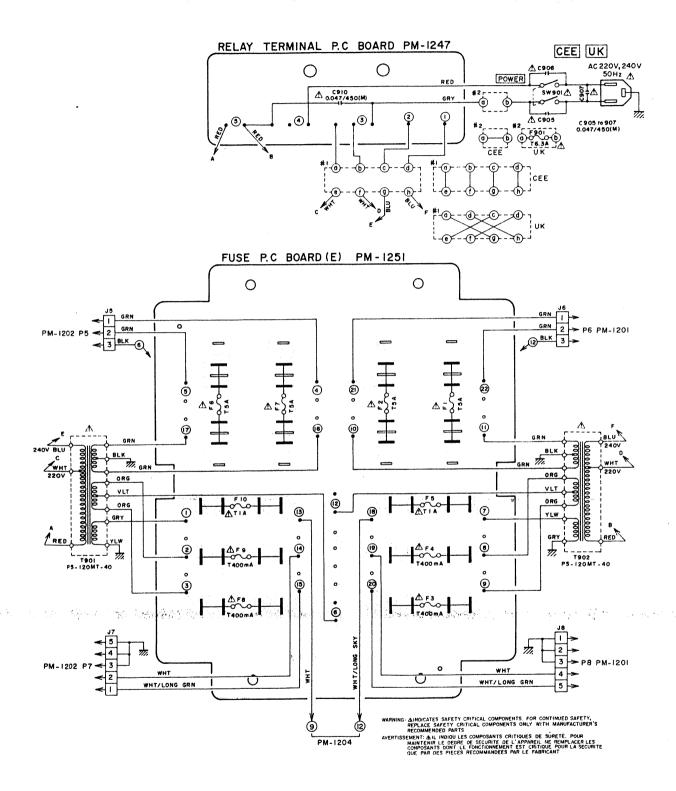


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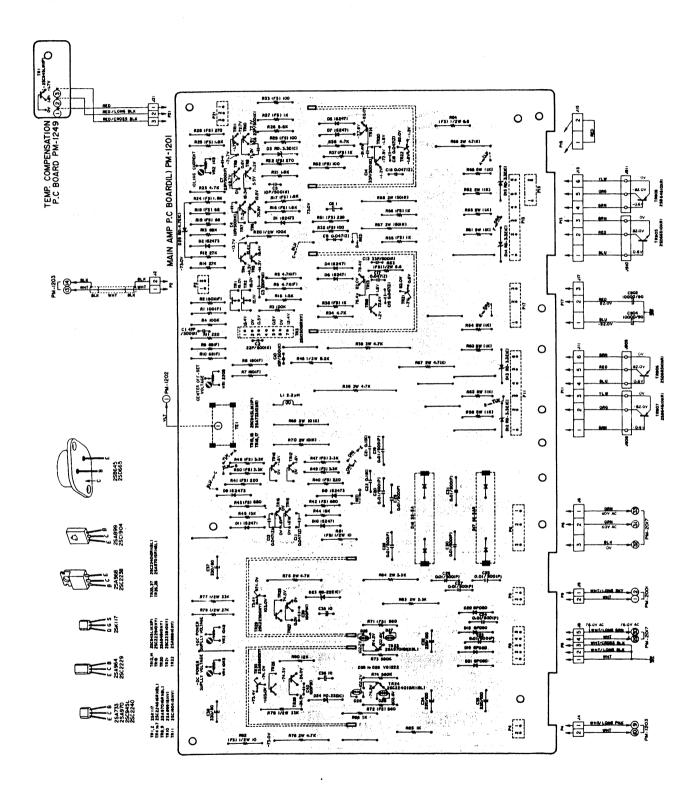
6) FUSE P.C BOARD (C) PM-1248 AND RELAY TERMINAL P.C BOARD PM-1247 (CSA, AAL)



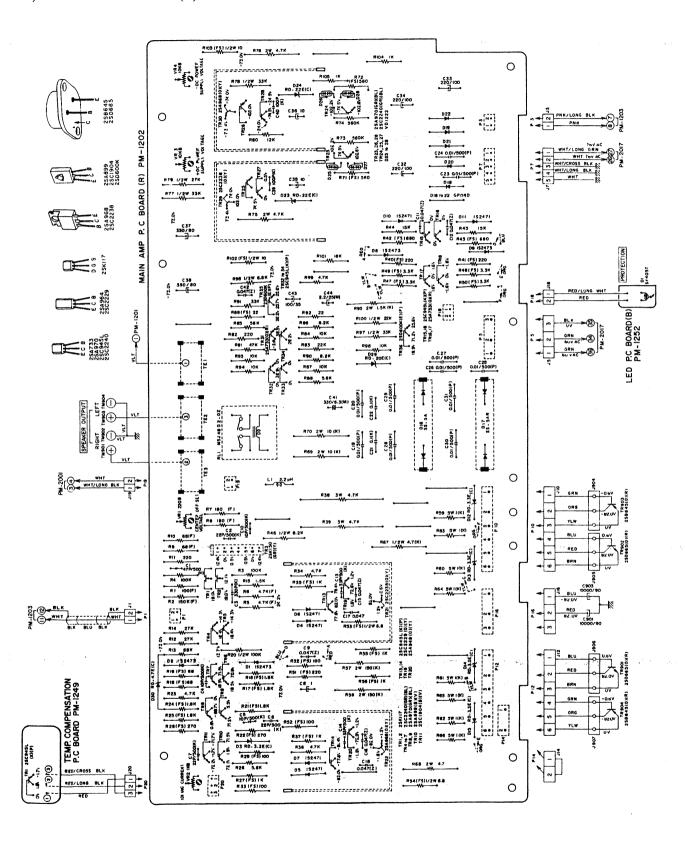
7) FUSE P.C BOARD (E) PM-1251 AND RELAY TERMINAL P.C BOARD PM-1247 (CEE, UK)



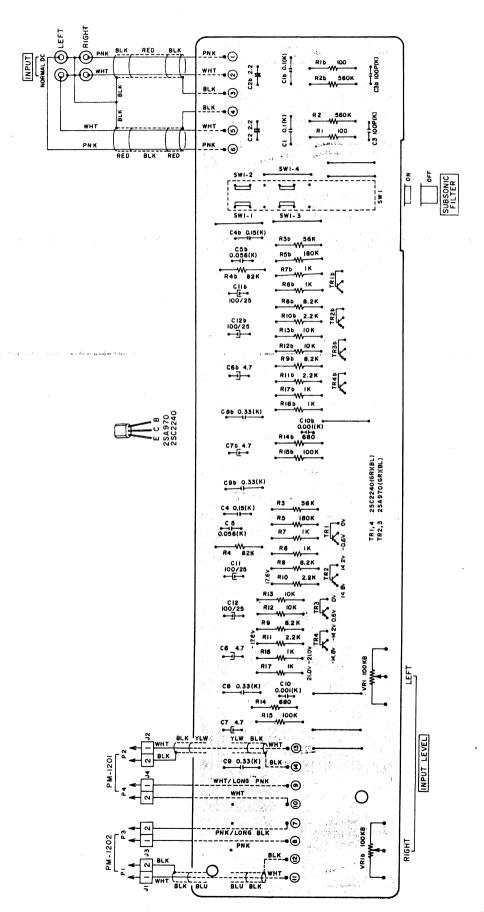
4. MODEL PS-200M COMPOSITION OF VARIOUS P.C BOARDS 1) MAIN AMP P.C BOARD (L) PM-1201 AND TEMP. COMPENSATION P.C BOARD PM-1249



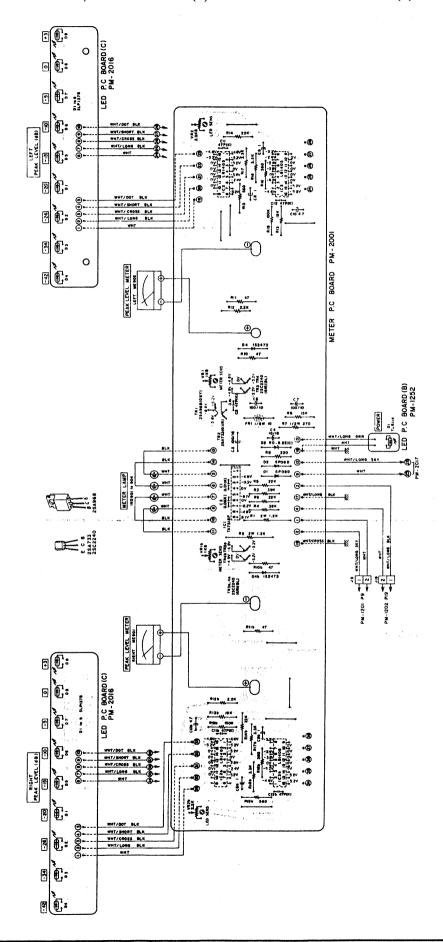
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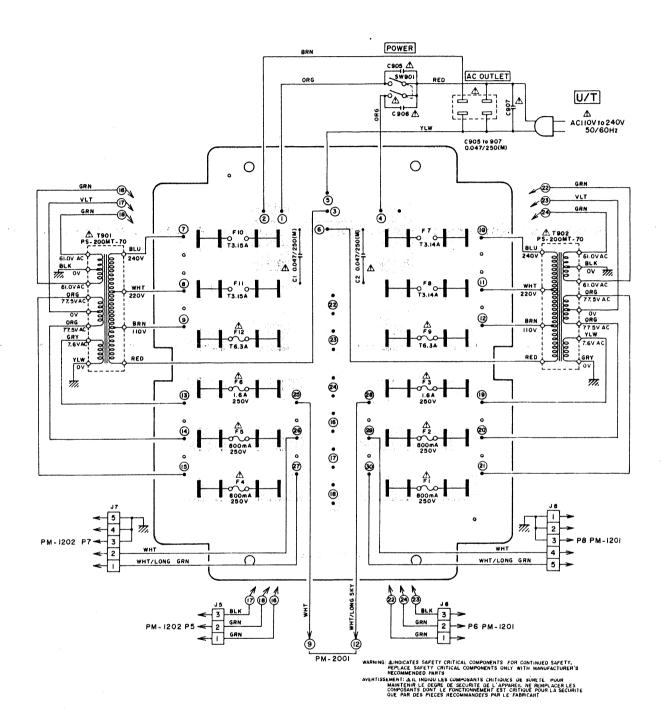
3) FILTER P.C BOARD PM-1203



4) METER P.C BOARD PM-2001, LED P.C BOARD (B) PM-1252 AND LED P.C BOARD (C) PM-2016

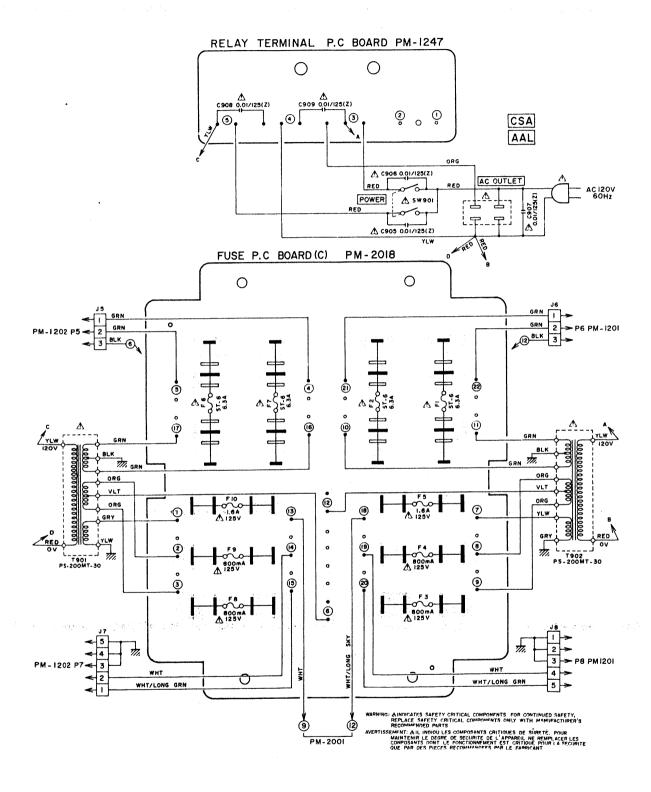


5) FUSE P.C BOARD (U) PM-2017 (U/T)

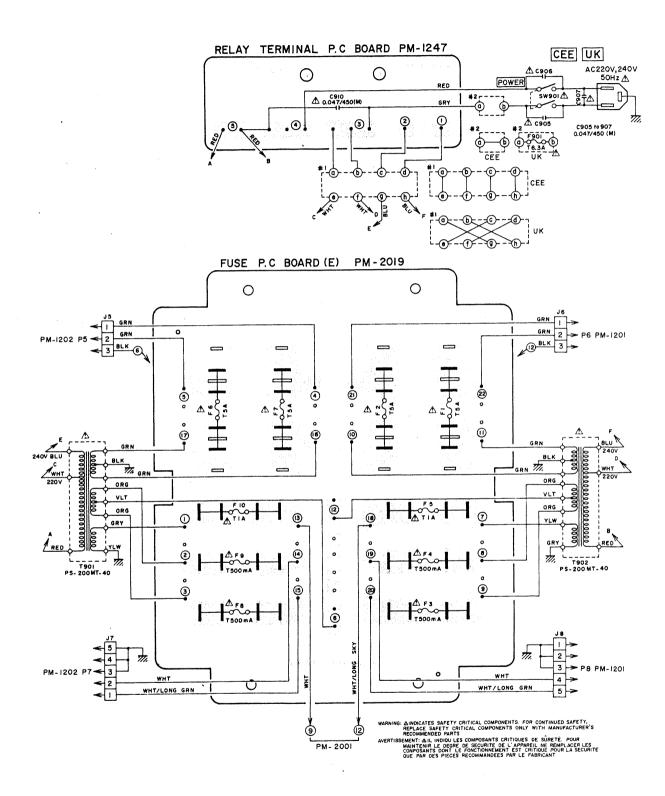


47

6) FUSE P.C BOARD (C) PM-2018 AND RELAY TERMINAL P.C BOARD PM-1247 (CSA, AAL)



7) FUSE P.C BOARD (E) PM-2019 AND RELAY TERMINAL P.C BOARD PM-1247 (CEE, UK)



THE RESIDENCE OF A PROPERTY OF THE

a bereichte gestellt The self-constitution and property with a selection of the selection of th PARTS LIST TABLE OF CONTENTS No. 1122 WAR ---I. MODEL PS-200C 2 PRE AMP P.C BOARD (PC 2056/2056S) BLOCK 3. POWER SUPPLY P.C. BOARD (PC 2003/2003S) BLOCK 4: SELECTOR P.C. BOARD (PC 2001/2001S) BLOCK: 4. SELECTOR CHANGE CHAN STANAIN AM HE HOVERNIEM NE NOW FOUR PRESENTATION OF THE POST OF THE PROPERTY O 7: FINAL ASSEMBLY BLOCK

11: MODEL ES 200M

1: RECOMMENDED SPARE PARTS LIST 2: MAIN AMP P.G-BO ARD (B) (PM-1201/12015) BLOG 3: MAIN AMP P.G-BO ARD (R) (PM-1207/12025) BLOG 4: FILTER P.G-BO ARD (PM-1203/12035) BEOGLS 5: METERIC (BOARD (PM-2007/20015) BEOGLS

:51 - 56 lect ...

HOW TO USE THIS PARTS LIST

- 1. This parts list is compiled by various individual blocks based on assembly process.
- 2. When ordering parts, please describe parts number, serial number, and model number in detail.
- 3. How to read List - The reference number corresponds with illustration or photo number of that particular parts list.

This number corresponds with the Figure Number. This number corresponds with the individual parts index number -A small "x" indicates the inability to show that particular part in the Photo or Illustration. Schematic Diagram Number of individual

manufactured part. (not required for parts order) -Quantity of particular part required. Parts No.

FLYWHEEL BLOCK #13 800425 Flywheel Block Assy. Comp. RDG #13 1 12-115x 244506 Flywheel Only 12-116 RD-233 12-117x 244754 Felt, Flywheel RD-275 12-118 251324 Main Metal Case RD-236 253080 Main Metal RD-237

- The symbol numbers shown on the P.C. Board list can be matched with the Composite Views of Components of the Schematic Diagram or Service Manual.
- Please utilize separate "Common List for Service Parts" for Resistor Parts orders.
- 6. The shape of the parts and parts name, etc. can be confirmed by comparing them with the parts shown on the Electrical Parts Table of P.C. Board.
- 7. Both the kind of part and installation position can be determined by the Parts Number. To determine where a parts number is listed, utilize Parts Index at end of Parts List.

It is necessary first of all to find the Parts Number. This can be accomplished by using the Reference Number listed at right of parts number in the Parts Index. (meaning of ref. no. outlined in Item 3 above).

- 8. Utilize separate "Price List for Parts" to determine unit price. The most simple method of finding parts Price is to utilize the reference number.
- CAUTION: 1. When placing an order for parts, be sure to list the parts no. model no., and description. There are instances in which if any of this information is omitted, parts cannot be shipped or the wrong parts will be delivered.
 - 2. Please be careful not to make a mistake in the parts no. If the parts no. is in error, a part different from the one ordered may be delivered.
 - 3. Because parts number and parts unit supply in the Preliminary Service Manual (Basic Parts List) may be partially changed, please use this parts list for all future reference.

SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED

AVERTISSEMENT: A IL INDIQU LES COMPOSANTS CRITIQUES DE SURETE. POUR MAINTENIR LE DEGRE DE SECURITE DE L'APPAREIL NE REMPLACER LES COMPOSANTS DONT LE FONCTIONNEMENT EST CRITIQUE POUR LA SECURITE QUE PAR DES PIECES RECOM-MANDEES PAR LE FABRICANT.

AC INLET SYSTEM

This model is equipped with an AC INLET SYSTEM. Please refer to the AC INLET SYSTEM CHART below for the specific type. By the AC INLET SYSTEM, AC (mains) cord can be connected to and disconnected from the model because the model is provided with socket exclusively for AC (mains) cord on its main body.

Please note, however, that certain models are not equipped with this system and has a built-in AC (mains) cord as before.

AC INLET SYSTEM CHART

CLASS I



European

countries



Picture 1 to be installed





CLASS II

This mark indicating double insula-

tion will be attached to machine's rear



AC (mains)







differs according to wall socket



differs according to wall socket

Parts List for AC (mains) Cord Set

Connects to

machine's

AC Inlet

Star	ndard	Description	Type of AC Inlet	Parts No.
	CEE	Cord Set CEE (3 cores)	3P	EW302993
Class I	BEAB	Cord Set BEAB (3 cores)	3P	EW302994
Class 1	SAA	Cord Set SAA (3 cores)	3P	EW302996
	U/T	Cord Set U/T (3 cores)	3P	EW302646
	CEE	Cord Set CEE (2 cores)	2P	EW638144
Class II	BEAB	Cord Set BEAB (2 cores)	2P	EW302995
C1455 11	SAA	Cord Set SAA (2 cores)	2P	EW302991
	U/T	Cord Set U/T (2 cores)	2P	EW302899

1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

Parts No.	Description	Note
BA311370	Power Supply P.C Board Comp. PS-200C	
BA313970	Pre Amp P.C Board Comp. PS-200C	(New Type)
BT311809	⚠ Power Trans. PS-200CT-30	(CSA)
BT311810	⚠ Power Trans. PS-200CT-40	(CEE, UK)
BT311811	⚠ Power Trans. PS-200CT-70	(U/T)
ED311794	LED SY405T	
ED245430	Silicon Diode GP08G	
ED624903	Silicon Diode 1S2473	
ED490511	Varistor VD1222	
ED311752	Zener Diode RD-22E (C)	
ED311853	Zener Diode RD-6.2E (C)	
EF306088	⚠ Fuse 315mA 125V	(CSA)
EF306125	⚠ Fuse 315mA 250V	(U/T)
EF309391	⚠ Fuse 800mA 125V	(CSA)
EF309388	⚠ Fuse 800mA 250V	(U/T)
EF300596	⚠ Fuse (FST) 200mAT	(CEE, UK)
EF300598	⚠ Fuse (FST) 315mAT	(CEE, UK)
EI311789	IC TA72220P	
EP249344	Reed Relay, L Type L24	
ES664222	⚠ Push SW. SDG-5P TV-5 U/C	SW901 (U/T, CSA)
ES665807	⚠ Push SW. SDG-5P 5A/80A 250V	SW901 (CEE, UK)
ES311799	Lever SW. SLA22301	
ES311797	Lever SW. SLA24201	(Old Type)
ES311798	Lever SW. SLA24301	
ES315601	Lever SW. SLA26301	(New Type)
ES311803	Rotary SW. SR-26 (PH-2)N 2-4-5 20KC	
ES311802	Rotary SW. SR-26 (PH-2)N 4-8-6 20KC	
ES246227	Slide SW. SSC323E	
ET302465	FET 2SK117 (SPECIAL)	
ET311792	FET 2SK150 (GR) (Y)	
ET311791	Transistor 2SA968 (O) (Y)	
ET305463	Transistor 2SA970 (GR) (BL)	
ET301165	Transistor 2SB631K (E) (F)	
ET311790	Transistor 2SC2238 (O) (Y)	
ET307195	Transistor 2SC2240 (GR) (BL)	
ET300931	Transistor 2SD600K (E) (F)	
EV311795	Double Axial 6-Throw/Vol. (Detent) WKHQ110	(Old Type)
EV315600	Double Axial 6-Throw/Vol. (Detent) WKHQ110C01	(New Type)
EV618052	Semi-Fixed/Vol. CR19R 1KB	
EV312338	Semi-Fixed/Vol. CR19R 22KB	
EV311796	2 Throw/Vol. (Detent) GH30E 24K (SPECIAL)×2	

2. PRE AMP P.C BOARD (PC-2056/2056S) BLOCK

		•	LOCK				
Symbol No.	Parts No.	Description	Schematic No.	Symbol No.	Parts No.	Description	Schemati No.
2-1	BA313970	Pre Amp P.C Board		2-C30	EC311781	NP/C. 22µF 50WV	24-17-33
	DASISTIO	Comp. PS-200C		2-C32	EC311780	NP/C. 4.7µF 50WV	24-17-33
		(New Type)	PC-2056	2-C35	EC311782	NP/C. 47µF 50WV	24-17-33
a TD	ET205462		1 0 2000	2-C49	EC311778	NP/C. 1µF 50WV	24-17-33
2-TR1	ET305463	Transistor	45 1 202				
		2SA970(GR)(BL)	45-1-303	2-C50	EC311780	NP/C. 4.7μF 50WV	24-17-33
2-TR2	ET307195	Transistor		2-C51	EC311780	NP/C. 4.7μF 50WV	24-17-33
		2SC2240(GR)(BL)	45-1-302	2-R1	ER310323	Metal Film/R. 1/4W	20.00.00
2-TR3	ET305463	Transistor 2SA970(GR)(BL)	45-1-303	2-R2	ER311751	10 ohms (F) Metal Film/R. 1/4W	35-17-12
2-TR4,5	ET307195	Transistor	43-1-303	2-82	EKJI1/JI	100 ohms (F)	35-17-12
2,5		2SC2240(GR)(BL)	45-1-302	2-R5,6	ER312461	Metal Film/R. 1/4W	
2-TR6	ET305463	Transistor				820 ohms (F)	35-17-12
		2SA970(GR)(BL)	45-1-303	2-R28,29	ER311875	Metal Film/R. 1/4W	
2-TR7	ET311792	FET 2SK150(GR)(Y)	45-12-22			330 ohms (F)	35-17-12
2-TR8,9	ET302465	FET 2SK117(SPECIAL)	45-12-16	2-R31	ER311772	Metal Film/R. 1/4W	
2-TR10to1	2 ET307195	Transistor				39 ohms (F)	35-17-12
		2SC2240(GR)(BL)	45-1-302	2-R40	ER311753	Metal Film/R. 1/4W	
2-TR13	ET305463	Transistor				21 K (F)	35-17-12
		2SA970(GR)(BL)	45-1-303	2-R41	ER311754	Metal Film/R. 1/4W	
2-TR14,15	ET307195	Transistor				1.78K (F)	35-17-12
		2SC2240(GR)(BL)	45-1-302	2-R46,47	ER311755	Metal Oxide Film/R. 1W	
2-TR16	ET305463	Transistor				15 ohms (K)	35-15-10
		2SA970(GR)(BL)	45-1-303	2-R51	ER311757	Metal Film/R. 1/4W	
2-TR17	ET300931	Transistor 2SD600K(E)(F)	45-1-278			4.7K (F)	35-17-12
2-TR18	ET301165	Transistor 2SB631K(E)(F)	45-1-277	2-R52	ER311759	Metal Film/R. 1/4W	
	4 ET302465	FET 2SK117 (SPECIAL)	45-12-16			82K (F)	35-17-12
2-TR25to2	7 ET307195	Transistor		2-R53	ER311760	Metal Film/R. 1/4W	
		2SC2240(GR)(BL)	45-1-302			18K (F)	35-17-12
2-TR28	ET305463	Transistor		2-R54	ER311761	Metal Film/R. 1/4W	25.5.10
		2SA970(GR)(BL)	45-1-303		ED	4.3K (F)	35-17-12
2-TR29,30	ET307195	Transistor	45 1 200	2-R55	ER310324	Metal Film/R. 1/4W	25 15 16
	F	2SC2240(GR)(BL)	45-1-302		FD 244 552	1K (F)	35-17-12
2-TR31	ET305463	Transistor	45-1-303	2-R63	ER311773	Metal Film/R. 1/4W	35-17-12
2-TR32	ET307195	2SA970(GR)(BL) Transistor	45-1-303	2 B 64	ER311757	3.3K (F) Metal Film/R, 1/4W	33-17-12
2-1 K32	E130/193	2SC2240(GR)(BL)	45-1-302	2-R64	EKSII/S/	4.7K (F)	35-17-12
2-TR33,34	ET305463	Transistor	45-1-302	2-R75	ER308849	Carbon/R. F 1/4W	33-11-12
2-1 133,34	£1303403	2SA970(GR)(BL)	45-1-303	2-173	EK300049	220 ohms (J)	35-11-25
2-TR35	ET307195	Transistor	45-1-505	2-R76,77	ER307196	Carbon/R. F 1/4W	33-11-23
2-1 K33	21307193	2SC2240(GR)(BL)	45-1-302	2-10,77	ER30/190	100 ohms (J)	35-11-25
2-D1	ED490511	Varistor VD1222	45-10-7	1		100 011113 (3)	00 11 20
2-D1 2-D2to4	ED624903	Silicon Diode 1S2473	45-3-28	2-R80	ER311762	Metal Film/R. 1/4W	
	ED490511	Varistor VD1222	45-10-7	2-100	LKSIIIOZ	9.1K (F)	35-17-12
2-D5,6 2-D7to9	ED624903	Silicon Diode 1S2473	45-3-28	2-R81	ER311763	Metal Film/R. 1/4W	33-17-12
				2-801	EK311/63		25, 17, 19
2-D10	ED490511	Varistor VD1222	45-10-7		ED	2.4K (F)	35-17-12
2-RL1	EP249344	Reed Relay, L Type L24	47-2-28	2-R82	ER310436	Metal Film/R. 1/4W	25 17 10
2-VR1	EV315600	Double-Axial		2-R83	ER311764	3.9K (F) Metal Film/R, 1/4W	35-17-12
		6-Throw/Vol. (Detent)	36-37-7	2-883	EK311/04	750 ohms (F)	35-17-12
2-VR1	EV311795	WKHQ110C01(New Type)	30-31-1	2-R84	ER311765	Metal Film/R. 1/4W	33-17-12
2-V K1	E V 311 /93	Double-Axial 6-Throw/Vol. (Detent)		2-10-4	EKSII 703	110 ohms (F)	35-17-12
		WKHQ110 (Old Type)	36-37-3	2-R85	ER311766	Metal Film/R. 1/4W	
2-VR2	EV311796	2-Throw/Vol. (Detent)		2-1105	211311100	47K (F)	35-17-12
2-7102	2.511,70	GH30E 24K(SPECIAL)×2	36-37-7	2-R86	ER311767	Metal Film/R. 1/4W	
2-VR3	EV311796	2-Throw/Vol. (Detent)		2		1.2K (F)	35-17-12
	_,,,,,,	GH30E 24K(SPECIAL)×2	36-37-7	2-R87	ER311768	Metal Film/R. 1/4W	
2-VR4	EV618052	Semi-Fixed/Vol.				270 ohms (F)	35-17-12
		CR19R 1KB	36-28-4	2-R102,103	ER307196	Carbon/R. F 1/4W	
2-SW1	ES311798	Lever SW. SLA24301	25-12-52			100 ohms (J)	35-11-25
2-SW2	ES311799	Lever SW. SLA22301	25-12-53	2-R105	ER310326	Metal Film/R. 1/4W	
2-SW3	ES315601	Lever SW. SLA26301				10K (F)	35-17-12
		(New Type)	25-12-64	2-R106	ER310328	Metal Film/R. 1/4W	
2-SW3	ES311797	Lever SW. SLA24201				36K (F)	35-17-12
		(Old Type)	25-12-51	2-2	ZS421740	Screw, Pan 3×8 (Black)	
2-C8	EC311780	NP/C. 4.7µF 50WV	24-17-33				
2-C16	EC312462	Styrol/C. 560PF(K) 50WV	24-11-14	1			
2-C17	EC311788	Polypro. Film/C.	••				
		0.15µF(G) 100WV	24-22-3	1			
2-C18	EC311787	Polypro. Film/C.					
		0.039µF(G) 100WV	24-22-3	1			
2-C19	EC311786	Polypro. Film/C.		1			
		0.0033µF(G) 100WV	24-22-3	1			
2-C23	EC311780	NP/C. 4.7µF 50WV	24-17-33	I			

3. POWER SUPPLY P.C BOARD (PC-2003/2003S) BLOCK

		(10 2000/20002)	
Symbol No.	Parts No.	Description	Schematic No.
3-1	BA311370	Power Supply P.C Board	
		Comp. PS-200C	PC-2054
3-IC1	EI311789	IC TA7220P	45-8-327
3-TR1	ET305463	Transistor	
		2SA970 (GR) (BL)	45-1-303
3-TR2	ET307195	Transistor	
		2SC2240 (GR) (BL)	45-1-302
3-TR3	ET311790	Transistor 2SC2238(O)(Y)	45-1-339
3-TR4	ET311791	Transistor 2SA968(O)(Y)	45-1-338
3-TR5	ET307195	Transistor	
		2SC2240 (GR) (BL)	45-1-302
3-TR6	ET305463	Transistor	
		2SA970 (GR) (BL)	45-1-303
3-TR7	ET307195	Transistor	
		2SC2240 (GR) (BL)	45-1-302
3-TR8	ET305463	Transistor	
		2SA970 (GR) (BL)	45-1-303
3-TR9	ET300931	Transistor 2SD600K(E)(F)	45-1-278
3-TR10	ET301165	Transistor 2SB631K(E)(F)	45-1-277
3-TR11	ET300931	Transistor 2SD600K(E)(F)	45-1-278
3-D1to5	ED245430	Silicon Diode GP08G	45-2-68
3-D6,7	ED490511	Varistor VD1222	45-10-7
3-D8	ED311752	Zener Diode RD-22E (C)	45 -6 -72
3-D9	ED490511	Varistor VD1222	45-10-7
3-SW1	ES311797	Lever SW. SLA24201	25-12-51
3-VR1	EV312338	Semi-Fixed/Vol.	
		CR19R 22KB	36-28-4
3-R7	ER312460	Carbon/R. F 1/2W	
		15 ohms (J)	35-11-27
3-R12,13	ER311748	Metal Film/R. 1/4W	
		22K (F)	35-17-12
3-R29	ER483287	Metal Oxide Film/R. 2W	
2-1107	211.00207	100 ohms (K)	35-15-8
3-2	ZS421740	Screw, Pan 3x8 (Black)	
J-2	20.22.40	', ', ','	

4. SELECTOR P.C BOARD (PC-2001/2001S) BLOCK

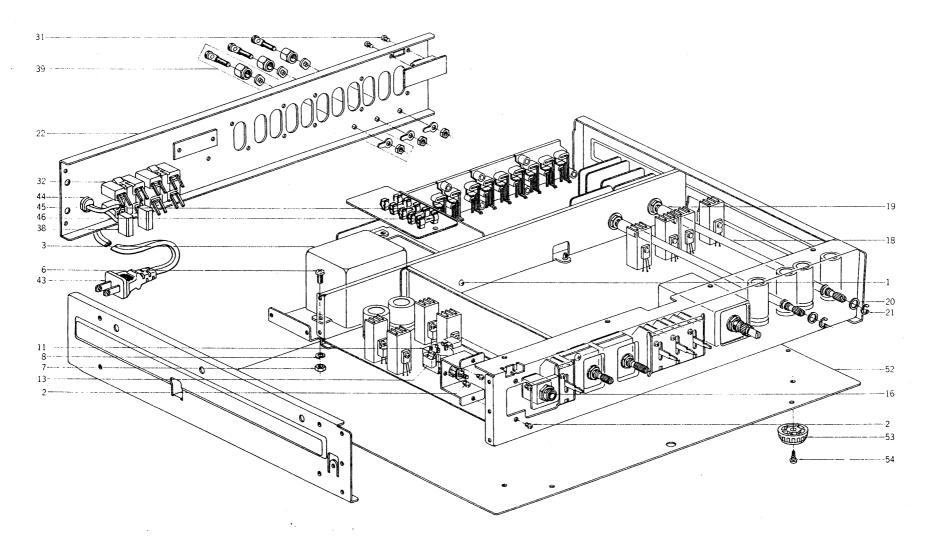
		•	
Symbol No.	Parts No.	Description	Schematic No.
4-TR1	ET635220	Transistor 2SC945L(K)(P)	45-1-85
4-TR2	ET300931	Transistor 2SD600K(E)(F)	45-1-278
4-D1	ED311853	Zener Diode RD-6.2E(C)	45 -6- 72
4-RL1	EP249344	Reed Relay L Type L24	47-2-28
4-SW1	ES311802	Rotary SW.	
		SR-26(PH-2)N 4-8-6 20KC	25-6-164
4-SW2	ES311803	Rotary SW.	
		SR-26(PH-2)N 2-4-5 20KC	25- 6 -165
4-J1	EJ312463	6P Pin Jack	31-5-147
4-J2	EJ293376	6P Pin Jack	31-1-198
1-J3,4	EJ293365	4P Pin Jack	31-1-197
4-J5	EJ312464	2P Pin Jack	31-5-148
4-C2	EC662128	Solid Aluminum/C.	
		(Vert.) 2.2µF(M) 25WV	24-19-2
4-C5	EC311780	NP/C. 4.7µF 50WV	24-17-33
4-R1	ER311774	Metal Film/R.	
T		1/4W 91K (F)	35-17-12
4-R7	ER311876	Metal Oxide Film/R.	
		3W 1.5K (K)	35-15-9

5. IMPEDANCE CHANGE P.C BOARD (PC-2033) BLOCK

Symbol No.	Parts No.	Description	Schematic No.
5-SW1	ES246227	Slide SW. SSC323E	25-3-119
5-R1	ER311774	Metal Film/R. 1/4W	
		91 K (F)	35-17-12
5-R2	ER311775	Metal Film/R. 1/4W	
		51K (F)	35-17-12

6. LED P.C BOARD (PM-1252) BLOCK

1	Symbol No.	Parts No.	Description	Schematic No.
	6-D1	ED311794	LED SY405T	45-15-24

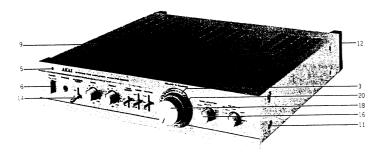


7. ASSEMBLY BLOCK

····	BLOCK	
Ref. Parts No.	Description	Schemati No.
7-1 ZS308846	Tapping Screw, #2, 3x8 (BR)	
7-2 ZS608477	(Oval Neck Screw, Pan 3x4	7-1-69
7-3 BT311811	△ Power Trans. PS-200CT-70 (U/T) 38-4-685
7-4x BT311809	△ Power Trans. PS-200CT-30 (CSA)	
7-5x BT311810	△ Power Trans. PS-200CT-40 (CEE, UK)	
7-6 ZS537006	Screw, Bind 4x8 (Black)	, ac 4 000
7-7 ZW413188 7-8 ZW273914	Nut, #1, M4	
7-8 ZW273914 7-9x ZS201778	Spring Washer, M4	
7-10x ZW413188	Screw, Pan 4x8	
7-11 ES664222	Nut, #1, M4 △ Push SW. SDG-5P TV-5 U/C	
7-12x ES665807	(U/T, CSA) A Push SW. SDG-5P 5A/80A	
7-13 EC283375	250V (CEE, UK) Δ MP/C. 0.047μF(M) 250WV	25-5-182
7-14x EC286198	(U/T) Δ Ceramic/C. AL-10 0.01μF(Z)	24- 9 -118
7-15x EC301320	125WV (CSA) Δ MP/C. 4700PF(M) 250WV	24-5-69
7-16 EJ311808	(CEE, UK)	24-9-122
7-16 EJ311808 7-17x ZS311745	Headphone Jack	31-2-100
7-17X 25311745	Tapping Screw, #2, 3x8 (BR)	
7-18 MS311709	W=8 (Black) Relay Shaft	PC-2008
	Joint	AA5240
7-20 ZW322110	Washer (Nylon) D6.1×10×1T	AA3240
7-21 ZW270123	'E' Ring 4M	6-1-9
7-22 SP311718	Rear Panel (U) (U/T)	PC-2014
7-23x SP311719	Rear Panel (A) (CSA)	PC-2014
7-24x SP311720	Rear Panel (E) (CEE)	PC-2015
7-25x SP311721	Rear Panel (B) (UK)	PC-2015
	Nut, M9	25-6-164
	Washer D9 Nut, M9	25-6-164
	Washer D9	25-6-165
	Tapping Screw, #2, 3×12 (BR)	25-6-165
	(Black)	
7-31 ZS608185 S 7-32 EZ225145 Z	Screw, Pan 2.6x4 \$\Delta 2.\text{Throw AC Outlet}\$	
	(U/T, CSA)	31-1-166
7-33x EJ296853 Z 7-34x ZS463353 T	A 3P In-let CM-3 (CEE, UK) Sapping Screw, #2, 3×8 (BR)	31-1-199
7-35x EC301320 A	(Black) MP/C. 4700PF(M) 250WV	
7-36x EC286198 A	(CEE, UK) Ceramic/C. AL-10 0.01 \(\mu F(Z)\)	24-9-122
7-37x EC301320 Δ		24-5-69
7-38 EC283375 Δ	(CEE, UK) Δ MP/C 0.047μF(M) 250WV	24-9-122
7-39 EJ311812 E	(U/T) arth Terminal	24-9-118 32-1-97
	eramic/C. DD111FZ	
7-41x EC427228 Ce	0.047μF(Z) 50WV eramic/C. DD111FZ	24-5-65
-42x EC427228 Ce	0.047μF(Z) 50WV gramic/C. DD111FZ	24-5-65
-43 EW311816 △	0.047µF(Z) 50WV Power Cord 125V 13A	24-5-65
	(U/T, CSA) rain Relief SR-4N-4	26-3-75
-45° EF309388 △	(U/T, CSA) Fuse 800MA 250V (U/T)	2-7-49
-46 EF306125 △	Fuse 315MA 250V (U/T)	39-1-64 39-1-64
4/X EF309391 A	Fuse 800MA 125V (CSA)	39-1-65
49x E1306088 V	Fuse 315MA 125V (CSA)	39-1-65
49x EF300598 ▲	Fuse (FST) 315MAT (CEE, UK)	39-1-61
A	Fuse (FST) 200MAT (CEE, UK)	39-1-61
	(,)	

Ref.	Parts No.	David of	Schematic
No.	raits NO.	Description	No.
			140.
	FINAL AS	SEMBLY BLOCK	
7-51x	ZS311746	Tapping Screw, #2, 3×8	
		(Oval Neck)	7-1-69
7-52	SP311722	Bottom Plate	
7-53	SA311742	Circular Foot	PC-2016
7-54	ZS311747		PC-2032
7-34	25311/4/		
		(Black)	

8. FINAL ASSEMBLY BLOCK



8. FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
	FRONT PA	NEL BLOCK	
8-1	BD313972		
0-1	DD0103.1	PS-200C (New Type)	
8-2x	BD313973	Front Panel Block Comp.	
0 2	555107.10	PS-200C-BL (New Type)	
8-3	TA311726	Memory Plate	PC-2019/2020
8-4x	TA311727	Memory Plate (BL)	PC-2019/2020
8-5	SE311728	Power Lens	PC-2021
8-6	SB312474	Button	PC-2042
8-7x		Button (BL)	PC-2042
8-8x	ZG312478		PC-2045
0-02	20012		
	FINAL ASS	EMBLY BLOCK	
8-9	BC311730		PC-2023
8-10x		Case (BL)	PC-2023
8-11	ZS537006	Screw, Bind 4x8 (Black)	
8-12	SA311714	Foot	PC-2029
8-13x	ZS411232	Screw, Bind 4x8	
8-14	ML311733	Lever (B)	PC-2025
8-15x	ML311734	Lever (B-BL)	PC-2025
8-16	SK311735	Knob	PC-2026
8-17x	SK311736	Knob (BL)	PC-2026
8-18	SK311737	Double Knob (Upper)	PC-2027
8-19x	SK311738	Double Knob (Upper-BL)	PC-2027
8-20	SK311739	Double Knob (Lower)	PC-2028
8-21x	SK311740	Double Knob (Lower-BL)	PC-2028

--- When ordering parts, please describe Parts Number, Description, and Model Number in detail.

II. MODEL PS-120M

1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

Parts No.	Description	Note
BA311438	Filter P.C Board Comp. PS-120M	·
BA311432	Main Amp P.C Board (L) Comp. PS-120M	
BA311436	Main Amp P.C Board (R) Comp. PS-120M	
BA311440	Meter P.C Board Comp. PS-120M	
BT311862	⚠ Power Trans. PS-120MT-30	(CSA)
BT311860	△ Power Trans. PS-120MT-40	(CEE, UK)
BT311859	△ Power Trans. PS-120MT-70	(U/T)
EC311688	Elect./C. 10000μF 71WV	
ED311794	LED SY405T	
ED311857	LED TLR114	
ED300924	Silicon Diode GP08D	
ED311849	Silicon Diode SS-3A	
ED311851	Silicon Diode SS-3AR	
ED311852	Silicon Diode 1S2471	
ED624903	Silicon Diode 1S2473	
ED490511	Varistor VD1222	
ED311854	Zener Diode RD-11E (C)	
ED311752	Zener Diode RD-22E (C)	
ED311864	Zener Diode RD-3.3E (C)	
ED311853	Zener Diode RD-6.2E (C)	
EF303348	⚠ Fuse ST-6 6.3A	(CSA)
EF308847	⚠ Fuse 1.6A 125V	(CSA)
EF311839	⚠ Fuse 1.6A 250V	(U/T)
EF305703	△ Fuse 630mA 125V	(CSA)
EF306124	△ Fuse 630mA 250V	(U/T)
EF300577	△ Fuse (EAK) 5AT	(CEE, UK)
EF623103	⚠ Fuse (SEMKO T) 1AT	(CEE, UK)
EF691007	△ Fuse (SEMKO T) 3.15AT	(U/T)
EF668474	⚠ Fuse (SEMKO T) 400mAT	(CEE, UK)
EF242605	△ Fuse (SEMKO T) 6.3AT	(U/T)
EI311855	IC LB1405	
EI308865	IC TA7318P	
EL311833	Lamp (Cord Type) 8V 300mA (200mmx2)	
EM311863	Meter KL-65L-100	
EP311858	Relay MSJ48D2-0Z	
ES311805	⚠ Lever SW. SY02-2 (U85DMU, C)	(U/T, CSA)
ES311806	⚠ Lever SW. V85DV	(CEE, UK)
ES311690	Push SW. J-K2014	
ET302465	FET 2SK117 (SPECIAL)	
ET311792	FET 2SK150 (GR) (Y)	
ET557965	Transistor 2SA733 (Q) (R)	

Parts No.	Description	Note
ET311845	Transistor 2SA899 (B) (V)	
ET311844	Transistor 2SA949 (O) (Y) AKAI	
ET311791	Transistor 2SA968 (O) (Y)	
ET305463	Transistor 2SA970 (GR) (BL)	
ET311847	Transistor 2SB681 (O) (R) AKAI	
ET311865	Transistor 2SC1904 (B) (V)	
ET312485	Transistor 2SC2229 (O) (Y) AKAI	
ET311790	Transistor 2SC2238 (O) (Y)	
ET307195	Transistor 2SC2240 (GR) (BL)	
ET635220	Transistor 2SC945L (K) (P)	
ET311846	Transistor 2SD551 (O) (R) AKAI	
ET300931	Transistor 2SD600K (E) (F)	
EV310077	Semi-Fixed/Vol. (Solid) CR29R 1KB	
EV311836	Semi-Fixed/Vol. (Solid) CR29R 10KB	
EV311838	Semi-Fixed/Vol. (Solid) CR29R 220 ohms (B)	
EV311834	Vol. V24L52PHN25KC 100KB	
EV311835	Semi-Fixed/Vol. (Solid) CR29R 2.2KB	

2. MAIN AMP P.C BOARD (L) (PM-1201/1201S) BLOCK

2-1	Symbol No.	Parts No.	Description	Schematic No.	Symbol No.	Parts No.	Description	Schematic No.
2.TR.2		BA311432			2-R21	ER311668		25 11 25
Transistor Tra	2 TP1 2	FT202465			2-R22	ER311664	Carbon/R. F 1/4W	35-11-25
SCC1240(GR)(RL) 6-1381 S1-128 S							270 ohms (J)	35-11-25
2-TR10	2-TR4to7	ET307195		45-1-302	2-R23	ER311668		35-11-25
Transitor Tran	2-TR8,9	ET305463		43-1-302	2-R25	ER311668	Carbon/R. F 1/4W	
Transistic Transistor Tra					2 227	FR311667		
2.TR13015 E7635220 Transistor 28C949(L(K)P) 6:148 Transistor 28C949(K)P) 6:149 Transi							Carbon/R. F 1/4W	
Transistor SEC945L(K)(P) 61-184 17		ET635220	Transistor 2SC945L(K)(P)					35-11-25
2-TR19					2-R29	ER 307196		35-11-25
2-TR20 ET31184 Transistor 2SA949(O)(Y) 2-TR21 ET311790 Transistor 2SA95(O)(Y) 2-TR21 ET311791 Transistor 2SA95(O)(Y) 2-TR21 ET311791 Transistor 2SA95(O)(Y) 2-TR24 ET311791 Transistor 2SA95(O)(Y) 2-TR24 ET311791 Transistor 2SA95(O)(Y) 2-TR26 ET305463 Transistor 2SA95(O)(Y) 2-TR27 ET301795 Transistor 2SA95(O)(Y) 2-TR28 ET305403 Transistor 2SA95(O)(Y) 2-TR29 ET311790 Tr				40-1-00	2-R32,33	ER307196	Carbon/R. F 1/4W	
2-TR21				45-1-349		ED 211667		
2-FR21	2-TR20	ET311844		45-1-340				
2-RR24 2-RR25 2-RR26 2-RR	2-TR21	ET311790						
2-TR24_25				45-1-338	2 240 41	ED 200040		35-15-9
2-TR24,25 E7307195	2-TR23	ET305463		45-1-303	2-840,41	EK308049		35-11-25
2-TR26 E7305463 Transistor 25070(GR)(BL) 2-TR27 E7307195 Transistor 250240(GR)(BL) 2-TR28 E7305463 Transistor 250240(GR)(BL) 2-TR29 E7311790 Transistor 250240(GR)(BL) 2-TR30 E7311790 Transistor 25040(GR)(BL) 2-TR30 E7311790 Transistor 25040(GR)(GR)(GR)(GR)(GR)(GR)(GR)(GR)(GR)(GR)	2-TR24,25	ET307195			2-R42,43	ER310843		
2-TR27 ET307195 Transistor 2SC2240(GR)(BL) 45-130		Eman # 4 / 2		45-1-302	2 0474050	ED 211440		35-11-25
2-TR27	2-TR26	ET305463		45-1-303	2-84/1050	EKSIIOOY		35-11-25
2-TR28 ET305463 Transistor	2-TR27	ET307195	Transistor		2-R51,52	ER311662		
2-1R29 E7311790 Transistor 2SC2338(O)(Y) 45-333 2-R55,56 ER311667 Carbon,R. F. I/4W IK (I) 35-11-25 Carbon,R. F. I/4W IK (I) 35-	a TD00	ET205462		45-1-302	2 P 5 3 5 4	FR 310147		35-11-25
2-TR29 ET311790 Transistor 2SC21238(O)(Y) 45-1339	2-1 K28	E1305463		45-1-303	2-133,34	EKJIOI4	10 ohms (J)	35-11-25
2-D1-2			Transistor 2SC2238(O)(Y)					35-11-25
2-D87					2-R57,58	ER439132		35-15-8
2-Da.9, B.6624903 Silicon Diode 1S2473 (53-32) 2-D1011 ED311852 Silicon Diode 1S2471 (53-32) 2-D1012 ED311849 Silicon Diode SS-3A (52-87) 2-D106 ED311849 Silicon Diode SS-3A (52-87) 2-D17 ED311851 Silicon Diode SS-3A (52-87) 2-D18 (52-11) ED311852 Silicon Diode SS-3A (52-87) 2-D18 (52-11) ED311852 Silicon Diode SS-3A (52-88) 2-D18 (52-11) ED311852 Silicon Diode SS-3A (52-88) 2-D25,26 ED490511 Post Compensation Coil 2-2µH (2-30%) Phase Compensation Coil 2-2µH (2-30%) Phase Compensation Coil CR29R 1KB (CR29R 1KB CR29R 1KB SP) Semi-Fixed/Vol. (Solid) CR29R 1KB SP (SP) Semi					2-R59to62	ER622978		
2-D12ro15								35-16-48
2-D16 ED311849 Silicon Diode SS-3A					2-R67,68	ER 31 2486		35-15-18
2-D17 ED311851 Silicon Diode SS-3AR 45-288 2-D18to21 ED300924 Silicon Diode GP08D 45-268 2-D131,244 ED311752 Zener Diode RD-22E(C) 45-672 2-D23,244 ED311752 Zener Diode RD-22E(C) 45-672 2-D25,26 ED490511 Phase Compensation Coil 2.2µH (±30%) 23-1-188 2-R71,72 ER311665 Carbon/R. F 1/2W 3-3.8 (K) 35-13-25 (A-1) 2-D25,26 ED490511 Phase Compensation Coil 2.2µH (±30%) 23-1-188 2-R81,82 ER308875 Carbon/R. F 1/2W 10 ohms (J) 35-11-27 (A-1) 2-D2-12 (A-1) 2-					2-R69,70	ER380856		** ** **
2-D23,24 ED311752 Zener Diode RD-22E(C) 45-472 2-D25,26 ED490511 Varistor VD1222 45-19-7 2-L1 EO551711 Phase Compensation Coil 2.2µH (±30%) 23-1-188 2-VR1 EV311838 Semi-Fixed/Vol. (Solid) CR29R 220 ohms (B) 36-28-6 2-VR2 EV310077 Semi-Fixed/Vol. (Solid) CR29R 108 Mcro Cnnector W-P1302 42-1-154 2-P4 EJ311841 Micro Connector W-P1302 42-1-154 2-P6 EJ207854 3P Plug. PC 42-19-6 2-P11 EJ699355 6P Plug, PC 42-19-6 2-P11 EJ311842 Micro Connector W-P1303 42-1-154 2-P11 EJ699355 6P Plug, PC 42-19-6 2-P11 EJ311842 Micro Connector W-P1303 42-1-154 2-P11 EJ311843 Micro Connector W-P1303 42-1-154 2-P11 EJ311840 Micro Connector W-P1303 42-1-154 2-P11 EJ311840 Micro Connector W-P1303 42-1-154 2-P11 EJ311840 Micro Connector W-P1303 42-1-154 2-P11 EJ311841 Micro Connector W-P1303 42-1-154 2-P11 EJ311842 Micro Connector W-P1303 42-1-154 2-P11 EJ699355 6P Plug W-P1 Micro Micro Micro Micro Micro Micro	2-D17	ED311851	Silicon Diode SS-3AR					35-15-8
2-D25,26 ED490511 Varistor VD1222					2-R71,72	ER311665		35-11-25
2-L1 EO551711 Phase Compensation Coil 2.2µH (230%) 23-1-188 2.VR1 EV311838 Semi-Fixed/Vol. (Solid) CR29R 220 ohms (B) 36-28-6 2-VR2 EV310077 Semi-Fixed/Vol. (Solid) CR29R 10KB 36-28-6 2-VR3,4 EV311836 Semi-Fixed/Vol. (Solid) CR29R 10KB 36-28-6 2-P2 EJ311841 Micro Connector W-P1302 42-1-154 2-P4 EJ311841 Micro Connector W-P1302 42-1-154 2-P6 EJ207854 3P Plug. PC 42-1-154 2-P9 EJ311841 Micro Connector W-P1302 42-1-154 2-P9 EJ311841 Micro Connector W-P1302 42-1-154 2-P1 E1699355 6P Plug. PC 42-1-154 2-P1 E1699355 6P Plug. PC 42-1-154 2-P1 EJ311840 2P Plug W-P3002 42-1-154 2-P21 EJ311840 4P Plug W-P3002 42-1-154 2-P21 EJ311840 4P Plug W-P3002 42-1-154 2-P21 EJ311841 Micro Connector W-P1303 42-1-154 2-P21 EJ311842 Micro Connector W-P1303 42-1-154 2-P21 EJ311842 Micro Connector W-P1303 42-1-154 2-P3 Micro Connector W-P1303 42-1-154 2-P4 ER311751 Metal Film/R. 1/4W 1500 ohms (F) 35-17-12 2-R5,6 ER311757 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 68 ohms (F) 35-17-12 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-17-12 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-17-12 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-17-12 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-17-12					2-R75,76	ER311673		
2-VR1 EV311838 Semi-Fixed/Vol. (Solid) CR29R 220 ohms (B) CR29R 10KB CR29R 10KB Semi-Fixed/Vol. (Solid) Semi-Fixed/Vol. (Solid) Semi-Fixed/Vol. (Solid) CR29R 10KB Semi-Fixed/Vol. (Solid) Self-25 CR83,84 ER312487 Metal Cxide Fixed Fixed Semi-Fixed/Vol. (Solid) Self-25 CR83,84 ER312487 Metal Cxide Fixed						ED 2000EF		35-15-8
2-VR2 EV310077 Semi-Fixed/Vol. (Solid) CR29R 1KB CR29R 1KB CR29R 1KB CR29R 1KB CR29R 1KB Semi-Fixed/Vol. (Solid) CR29R 1KB CR29R 1KB Semi-Fixed/Vol. (Solid) CR29R 1KB 2-VR3,4 EV311836 Semi-Fixed/Vol. (Solid) CR29R 10KB 36-28-6 CR29R 10KB 42-154 42	2.VR1	EV311838		23-1-188	2-881,82	EK308875		35-11-27
CR29R 1KB 36-28-6	2-4 1(1	21311030		36-28-6	2-R83,84	ER312487	Metal Oxide Film/R.	
2-VR3,4 EV311836 Semi-Fixed/Vol. (Solid) CR29R 10KB 2-P2 EJ311841 Micro Connector W-P1302 42-1154 2-P4 EJ311841 Micro Connector W-P1302 42-1154 2-P6 EJ207854 3P Plug, PC 42-195 2-P1 EJ311841 Micro Connector W-P1305 42-1154 2-P9 EJ311841 Micro Connector W-P1305 42-1154 2-P9 EJ311841 Micro Connector W-P1305 42-1154 2-P1 EJ699355 6P Plug, PC 42-195 2-P13 EJ699355 6P Plug, PC 42-195 2-P15 EJ311840 2P Plug W-P3002 42-1152 2-P17 EJ207854 3P Plug, PC 42-196 2-P1 EJ311842 Micro Connector W-P1303 42-1154 2-P1 EJ311843 Metal Film/R. 1/4W 150 ohms (F) 35-17-12 2-P1 EJ311840 Semi-Film/R. 1/4W 150 ohms (F) 35-17-12 2-P1 EJ311841 Micro Connector W-P1303 42-1154 2-P1 EJ311840 Semi-Film/R. 1/4W 150 ohms (F) 35-17-12 2-P1 EJ311840 Semi-Film/R. 1/4W 68 ohms (F) 35-17-12 2-P1 EJ311668 Carbon/R. F 1/4W 68 ohms (F) 35-17-12 2-P1 EJ311668 Carbon/R. F 1/4W 68 ohms (F) 35-17-12	2-VR2	EV310077		20.00.0		70462262		35-15-8
CR29R 10KB 36-28-6 2-P2 EJ311841 Micro Connector W-P1302 42-1-154 2-P6 EJ207854 3P Plug. PC 42-1-154 2-P9 EJ311841 Micro Connector W-P1305 42-1-154 2-P9 EJ311841 Micro Connector W-P1305 42-1-154 2-P1 EJ699355 6P Plug. PC 42-1-155 2-P15 EJ311840 2P Plug. PC 42-1-155 2-P15 EJ311840 2P Plug. PC 42-1-155 2-P17 EJ207854 3P Plug. PC 42-1-156 2-P18 ER311751 Metal Film/R. 1/4W 150 K(F) 35-17-12 2-R2 ER311672 Metal Film/R. 1/4W 35-17-12 2-R3,6 ER311673 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16.17 ER311668 Carbon/R. F 1/4W 68 ohms (F) 35-17-12 2-R18.19 ER311663 Carbon/R. F 1/4W 1.8K (J) 35-11-25 2-R18.19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-17-12	2-VR3.4	EV311836		36-28-6	2-2	23403333		
2-P4 EJ311841 Micro Connector W-P1302 42-1-154 2-P6 EJ207854 3P Plug. PC 42-1-154 2-P9 EJ311843 Micro Connector W-P1305 42-1-154 2-P9 EJ311840 Micro Connector W-P1305 42-1-154 2-P1 EJ699355 6P Plug. PC 42-1-155 2-P13 EJ699355 6P Plug. PC 42-1-155 2-P15 EJ311840 2P Plug W-P3002 42-1-155 2-P17 EJ207854 3P Plug. PC 42-1-156 2-P17 EJ311842 Micro Connector W-P1303 42-1-154 2-P17 EJ311842 Micro Connector W-P1303 42-1-154 2-P1 EJ311842 Micro Connector W-P1303 42-1-154 2-P1 EJ311842 Micro Connector W-P1303 42-1-154 2-P1 ER311671 Metal Film/R. 1/4W 100 ohms (F) 35-17-12 2-P1 ER311671 Metal Film/R. 1/4W 35-17-12 2-P1,8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-P1,0 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-P1,10 ER312368 Carbon/R. F 1/4W 68 ohms (F) 35-17-12 2-P1,10 ER311663 Carbon/R. F 1/4W 1.8(1) 35-11-25 2-P1,10 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-11-25			CR29R 10KB					
2-P6 EJ207854 3P Plug. PC 42-195 2-P8 EJ311843 Micro Connector W.P1305 42-1154 2-P1 EJ699355 6P Plug. PC 42-195 2-P15 EJ311840 2P Plug. PC 42-195 2-P15 EJ311840 2P Plug. PC 42-195 2-P17 EJ207854 3P Plug. PC 42-196 2-P21 EJ311842 4 Micro Connector W.P1303 42-1154 2-P21 EJ311842 3P Plug. PC 42-196 2-P21 EJ311842 Micro Connector W.P1303 42-1154 2-R1 ER311751 Metal Film/R. 1/4W 100 ohms (F) 35-17-12 2-R2 ER311672 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R7,8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 68 ohms (F) 35-17-12 2-R18,19 ER311663 Carbon/R. F 1/4W 1.8(1) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-11-25								
2-P8 EJ311843 Micro Connector W-P1305 42-1-154 2-P9 EJ311841 Micro Connector W-P1302 42-1-154 2-P11 E1699355 6P Plug, PC 42-195 2-P13 E1699355 6P Plug, PC 42-195 2-P15 EJ311840 2P Plug W-P3002 42-1-152 2-P17 EJ207854 3P Plug, PC 42-196 2-P21 EJ311842 Micro Connector W-P1303 42-1-154 2-R1 ER311751 Metal Film/R. 1/4W 100 ohms (F) 35-17-12 2-R2 ER311672 Metal Film/R. 1/4W 4.7K (F) 35-17-12 2-R5,6 ER311757 Metal Film/R. 1/4W 4.7K (F) 35-17-12 2-R7,8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 68 ohms (F) 35-17-12 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-11-25								
2-P11 E1699355 6P Plug, PC 42-195 2-P13 E1699355 6P Plug, PC 42-195 2-P15 E1311840 2P Plug W-P3002 42-1152 2-P17 E1207854 3P Plug, PC 42-196 2-P21 EJ311842 Micro Connector W-P1303 42-1154 2-R1 ER311751 Metal Film/R. 1/4W 100 ohms (F) 35-17-12 2-R2 ER311672 Metal Film/R. 1/4W 150 ohms (F) 35-17-12 2-R5,6 ER311757 Metal Film/R. 1/4W 4.7K (F) 35-17-12 2-R7,8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R18,19 ER311663 Carbon/R. F 1/4W 1.8K (J) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (I) 35-11-25	2-P8		Micro Connector W-P1305					
2-P13 EJ699355 6P Plug, PC 42-195 2-P15 EJ311840 2P plug W-P3002 42-1-152 2-P17 EJ207854 3P Plug, PC 42-196 2-P21 EJ311842 Micro Connector W-P1303 42-1-154 2-R1 ER311751 Metal Film/R. 1/4W 100 ohms (F) 35-17-12 2-R5,6 ER311757 Metal Film/R. 1/4W 150K (F) 35-17-12 2-R7,8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 1.8K (J) 35-17-12 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-17-12								
2-P15 EJ311840 2P Plug W-P3002 42-1-152 2-P27 EJ207854 3P Plug, PC 42-1-164 2-P21 EJ311842 Micro Connector W-P1303 42-1-154 2-R1 ER311751 Metal Film/R. 1/4W 150 ohms (F) 35-17-12 2-R5.6 ER311757 Metal Film/R. 1/4W 150 ohms (F) 35-17-12 2-R7.8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9.10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16.17 ER311668 Carbon/R. F 1/4W 1.80 ohms (F) 35-17-12 2-R18.19 ER311663 Carbon/R. F 1/4W 1.80 ohms (F) 35-17-12								
2-P21 EJ311842 Micro Connector W-P1303 42-F154 2-R1 ER311751 Metal Film/R. 1/4W 100 ohms (F) 35-17-12 2-R2, ER311672 Metal Film/R. 1/4W 150K (F) 35-17-12 2-R5,6 ER311757 Metal Film/R. 1/4W 2-R7,8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 1.18K (J) 35-17-12 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (I) 35-17-25 3		EJ311840	2P Plug W-P3002					
2-R1 ER311751 Metal Film/R. 1/4W 100 ohms (F) 35-17-12 2-R2 ER311672 Metal Film/R. 1/4W 150K (F) 35-17-12 2-R5,6 ER311757 Metal Film/R. 1/4W 4.7K (F) 35-17-12 2-R7,8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 1.8K (J) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (J) 35-11-25								
2-R2 ER311672 Metal Film/R.1/4W 150K (F) 35-17-12 2-R5,6 ER311757 Metal Film/R.1/4W 4.7K (F) 35-17-12 2-R7,8 ER311671 Metal Film/R.1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R.1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 1.18K (J) 35-17-12 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-17-12 3-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-17-25 3-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (F) 35-17-25				42-1-134				
2-R5,6 ER311757 Metal Film/R. 1/4W 4.7K (F) 35-17-12 2-R7,8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 1.8K (J) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (I) 35-11-25			100 ohms (F)	35-17-12				
2-R5,6 ER311757 Metal Film/R. 1/4W 2-R7,8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 1.8K (J) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (I) 35-11-25 4-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (I) 35-11-25	2-R2	ER311672		35-17-12				
4.7k (F) 35-17-12 2-R7,8 ER311671 Metal Film/R. 1/4W 180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 1.8k (J) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (I) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (I) 35-11-25	2-R5,6	ER311757						
180 ohms (F) 35-17-12 2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 1.8K (J) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (I) 35-11-25				35-17-12				
2-R9,10 ER312324 Metal Film/R. 1/4W 68 ohms (F) 35-17-12 2-R16,17 ER311668 Carbon/R. F 1/4W 1.8K (J) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68 ohms (I) 95-11-25	2-R7,8	ER311671		35-17-12				
2-R16,17 ER311668 Carbon/R. F 1/4W 1.8K (J) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68.0hm (J) 35-11-25	2-R9,10	ER312324						
1.8K (J) 35-11-25 2-R18,19 ER311663 Carbon/R. F 1/4W 68.0hm (J) 35-11-25	a D14 15	ED 211442		35-17-12				
2-R18,19 ER311663 Carbon/R. F 1/4W	2-K16,17	£K311668	Carbon/R. r 1/4W 1.8K (J)	35-11-25				
. 68 ohms (J) 35-11-25	2-R18,19	ER311663	Carbon/R. F 1/4W					
			68 ohms (J)	35-11-25	ı			

3. MAIN AMP P.C BOARD (R) (PM-1202/1202S) BLOCK

		(1141-1202/12020)					
			0 1	Symbol	D Ma	Description	Schematic
Symbol	Parts No.	Description	Schematic	No.	Parts No.	Description	No.
No.	raits No.	200017	No.	140.		14 - 1 Fit - ID 1 /4W	
	BA311436	Main Amp P.C Board (R)		3-R5,6	ER311757	Metal Film/R. 1/4W	35-17-12
3-1	BA311430	Comp. PS-120M	PM-1202			4.7K (F)	33-11-12
		FET 2SK117 (SPECIAL)	45-12-16	3-R7,8	ER311671	Metal Film/R. 1/4W	
3-TR1,2	ET302465	FET 25KIT7 (SI ECETE)	45-12-22	/		180 ohms (F)	35-17-12
3-TR3	ET311792	FET 2SK150 (GR) (Y)	40.10 -2	3-R9,10	ER312324	Metal Film/R. 1/4W	
3-TR4to7	ET307195	Transistor	45-1-302	3 117,20		68 ohms (F)	35-17-12
		2SC2240 (GR) (BL)	45-1-302	2 016 17	ER311668	Carbon/R. F 1/4W	
3-TR8,9	ET305463	Transistor		3-R16,17	LIGHTOOO	1.8K (J)	35-11-25
5 11.0,		2SA970 (GR) (BL)	45-1-303		ED 211662	Carbon/R. F 1/4W	
3-TR10	ET311845	Transistor 2SA899(B)(V)	45-1-341	3-R18,19	ER311663		35-11-25
	ET311865	Transistor 2SC1904(B)(V)	45-1-342			68 ohms (J)	30 11 20
3-TR11		Transistor 2SC945L(K)(P)	45-1-85	3-R21	ER311668	Carbon/R. F 1/4W	
3-TR13to15	E1635220	Transistor 2SA733(Q)(R)	45-1-124			1.8K (J)	35-11-25
3-TR16,17	ET557965	Transistor 2SC945L(K)(P)	45-1-35	3-R22	ER311664	Carbon/R. F 1/4W	
3-TR18	ET635220		45 1 55			270 ohms (J)	35-11-25
3-TR19	ET312485	Transistor 2SC2229(O)(Y)		3-R23	ER311668	Carbon/R. F 1/4W	
		AKAI	45-1-349	3-1(23	Division	1.8K (J)	35-11-25
3-TR20	ET311844	Transistor 2SA949(O)(Y)			ER311668	Carbon/R. F 1/4W	
		AKAI	45-1-340	3-R25	EK311000	1.8K (J)	35-11-25
3-TR21	ET311790	Transistor 2SC2238(O)(Y)	45-1-339			Carbon/R. F 1/4W 1K (J)	35-11-25
3-TR22	ET311791	Transistor 2SA968(O)(Y)	45-1-338	3-R27	ER311667		33 11 23
	ET305463	Transistor		3-R28	ER 31 1 6 6 4	Carbon/R. F 1/4W	05 11 05
3-TR23	E1303403	2SA970 (GR) (BL)	45-1-303			270 ohms (J)	35-11-25
				3-R29	ER307196	Carbon/R, F 1/4W	
3-TR24,25	ET307195	Transistor	45-1-302			100 ohms (J)	35-11-25
		2SC2240 (GR) (BL)	43-1 302	3-R32,33	ER307196	Carbon/R. F 1/4W	
3-TR26	ET305463	Transistor		3-1(32,33	211301170	100 ohms (J)	35-11-25
		2SA970 (GR) (BL)	45-1-303		ED 44466	Carbon/R. F 1/4W 1K (J)	35-11-25
3-TR27	ET307195	Transistor		3-R35	ER311667	Carbon/R. F 1/4W 1K (J)	35-11-25
3-11(2)		2SC2240 (GR) (BL)	45-1-302	3-R37	ER311667		30 11 00
3-TR28	ET305463	Transistor		3-R38,39	ER311683	Metal Oxide Film/R.	35-15-9
3-1 K20	E1303400	2SA970 (GR) (BL)	45-1-303			3W 3.3K (K)	22-12-3
	FT211500	Transistor 2SC2238(O)(Y)	45-1-339	3-R40,41	ER 308849	Carbon/R. F 1/4W	
3-TR29	ET311790	Transistor 2SA968(O)(Y)	45-1-338	1		220 ohms (J)	35-11-25
3-TR30	ET311791	Transistor 2SA733(Q)(R)	45-1-124	3-R42,43	ER310843	Carbon/R. F 1/4W	
3-TR31	ET557965					680 ohms (J)	35-11-25
3-TR32to3	4 ET635220	Transistor 2SC945L(K)(P)		3-R47to50	ER311669	Carbon/R. F 1/4W	
3-TR35	ET300931	Transistor 2SD600K(E)(F)) 43-1-210	3-1471030	2	3.3K (J)	35-11-25
3-TR36	ET307195	Transistor			ER311662	Carbon/R. F 1/4W	
		2SC2240 (GR) (BL)	45-1-302	3-R51,52	EK311002	22 ohms (J)	35-11-25
3-D1,2	ED624903	Silicon Diode 1S2473	45-3-28		ED 4444	Carbon/R. F 1/4W	
3-D4to7	ED311852		45-3-52	3-R53,54	ER310147	10 ohms (J)	35-11-25
	ED624903		45-3-28			Carbon/R, F 1/4W 1K (J)	35-11-25
3-D8,9	ED311852		45-3-52	3-R55,56	ER311667		35 11 25
3-D10,11			45- 6- 72	3-R57,58	ER439132	Metal Oxide Film/R.	
	5 ED311864		45-2-87			2W 150 ohms (K)	35-15-8
3-D16	ED311849	1 00 1 D	45-2-88	3-R59to62	ER622978	Metal Plate/R. MPC71F1	
3-D17	ED311851		45-2-68			5W 0.47 ohms (K)	35-16-48
3-D18to22	ED300924		45-6-72	3-R67,68	ER312486	Metal Oxide Film/R.	
3-D23,24	ED311752	Zener Diode RD-22E (C)		3-1(0.)00		2W 4.7 ohms (K)	35-15-18
3-D25,26	ED490511	Varistor VD1222	45-10-7	3-R69,70	ER380856		
3-D29	ED311854	Zener Diode RD-11E (C)	4 5-6- 72	3-869,70	ERSOOS	2W 10 ohms (K)	35-15-8
3-L1	EO551711				ED 244 / / 6		
3-21		2.2µH (±30%)	23-1-188	3-R71,72	ER311665	560 ohms (J)	35-11-25
3-VR1	EV311838						
2-4 KI	2.31.030	CR29R 220 ohms (B)	36-28-6	3-R75,76	ER311673	Metal Oxide Film/R.	35-15-8
	EV31007					2W 3.3K (K)	22-12-9
3-VR2	E 4 3100 /	CR29R 1KB	36-28-6	3-R89	ER311662		
						22 ohms (J)	35-11-25
3-VR3,4	EV31183	Semi-Fixed/Vol. (Solid)	36-28-6	3-R95	ER 309092	Metal Oxide Film/R.	
		CR29R 10KB		3-1033		2W 820 ohms (K)	35-15-8
3-RL1	EP311858	Relay MSJ48D2-0Z	47-1-38	- 510010	1 ED 208874		
3-P1	EJ311841	Micro Connector W-P130	2 42-1-154	3-K102,10	3 ER30887	10 ohms (J)	35-11-27
3-P3	EJ311841		2 42-1-154	1			
3-P5	EJ207854		42-1-96	3-2	ZS463353	Tapping Screw,	
	EJ311843		5 42-1-154	1		#2, 3x8 (BR) (Black)	,
3-P7			42-1-95				
3-P10	EJ699355		42-1-95	1			
3-P12	EJ699355	or riug, rc	42-1-152				
3-P14	EJ 311840						
3-P16	EJ207854	3P Plug, PC	42-1-96	1			
3-P18,19	EJ311841	Micro Connector W-P130	2 42-1-154	1			
3-P20	EJ311842	Micro Connector W-P130	3 42-1-154	1			
3-C41	EC31168		24-17-31	1			
	EC66212	- 44 A A A A A A A A A A A A A A A A A A					
3-C44	LC00212	(Vert.) 2.2µF (M) 25WV	7 24-19-2	1			
	ED 244.22						
3-R1	ER31175	100 ohms (F	35-17-12				
3-R2	ER31167	2 Metal Film/R. 1/4W 150K (F	35-17-12				
		130K (F	, 55 17 12				

—When ordering parts, please describe Parts Number, Description, and Model Number in detail.-

4. FILTER P.C BOARD

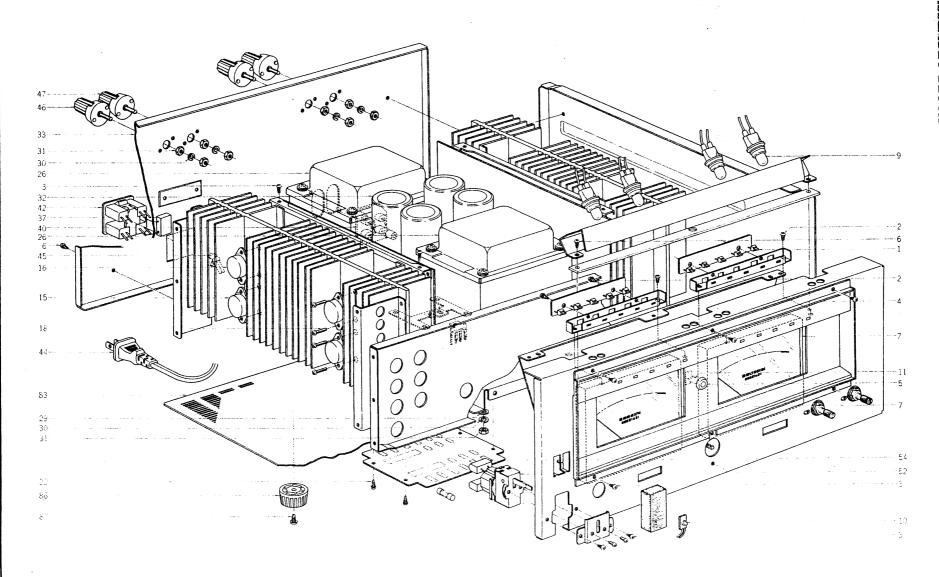
(PM-1203/1203S) BLOCK

5. METER P.C BOARD

(PM-1204/1204S) BLOCK

		(11111200/12005)	DLOCK			(111 1204/12045)	DLOCK
Symbol No.	Parts No.	Description	Schematic No.	Symbol No.	Parts No.	Description	Schematic No.
4-1	BA311438	Filter P.C Board Comp.		5-1	BA311440	Meter P.C Board Comp.	
		PS-120M	PM-1203			PS-120M	PM-1204
4-TR1	ET307195	Transistor		5-IC1	EI308865	IC TA7318P	45-8-306
		2SC2240 (GR) (BL)	45-1-302	5-IC2	EI311855	IC LB1405	45-8-328
4-TR2,3	ET305463	Transistor		5-TRI	ET311791	Transistor 2SA968(O)(Y)	45-1-338
		2SA970 (GR) (BL)	45-1-303	5-TR2	ET557965	Transistor 2SA733(Q)(R)	45-1-124
4-TR4	ET307195	Transistor		5-TR3,4	ET307195	Transistor	
		2SC2240 (GR) (BL)	45-1-302			2SC2240 (GR) (BL)	45-1-302
4-VR1	EV311834	Vol. V24L52PHN25KC		5-D1,2	ED300924	Silicon Diode GP08D	45-2-68
		100KB	36-2-44	5-D3	ED311853	Zener Diode RD-6.2E (C)	45-6-72
4-SW1	ES311690	Push SW. J-K2014	25-5-312	5-D4	ED624903	Silicon Diode 1S2473	45-3-28
4-C2	EC311779	NP/C. 2.2µF 50WV	24-17-33	5-VR1	EV310077	Semi-Fixed/Vol. (Solid)	
4-2	ZS608477	Screw, Pan 3x4		1		CR29R 1KB	36-28-6
				5-VR2	EV311835	Semi-Fixed/Vol. (Solid)	
						CR29R 2.2KB	36-28-6
				5-R1,2	ER312483	Metal Oxide Film/R. 2W	
						1.2K (K)	35-15-8
				5-FR1	ER293635	Fuse/R. FRN158 1/4W	
						10 ohms (1) 700m A	25-14-20

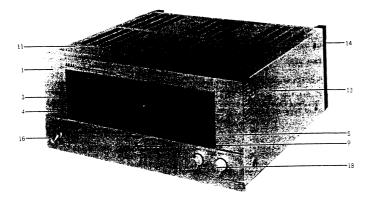
71



6. ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.	Ref.	Parts No.	Description	Sche
	LED P.C	BOARD (A) BLOCK	110.	No.		-	N
6-1		6 LED SLP137B	45-15-23	6-45	EZ63194		2-7-4
6-2	ZS44776		10 10 20	6-46	EJ311695		32-1-
		(Blace	:k)	6-47	EJ311696 EC308528		32-1-
		•	,	0-467	EC308528		
		HASSIS BLOCK		6.40	EC286198	0.047µF (M) 450WV (CEE, UK)	24-8-
6-3	ZS308846	Tapping Screw, #2, 3×8 (BR)		04,,,	LC200170	,	
		(Oval Nec	k) 7-1-69	6-50)	ZS608477	Screw, Pan 3x4	24-5-
6-4		9 Meter Plate	PM-1218/1219		ZS312349		
6-5	MH31162	7 Collar	PM-1217	6-52			4 6 -2-
6-6	ZS463353	Tapping Screw, #2, 3×8 (BR)			_0011000	(U85DMU, C) (U/T, CSA)	25-12
		(Blace	:k)	6-53x	ES311806	Δ Lever SW. V85DV (CEE,UK)	
6-7 6-8x		Meter KL-65L-100	46-2-23	6-54	EC283375	Δ MP/C 0.047μF (M) 250WV	25-12
		Screw, Pan 3x6 (Black)					24-9-
6-9	EL311833	Lamp (Cord Type) 8V 300mA		6-55x	EC308528	Δ Oil Paper/C. ECN-C4A	24-9-
		(200mm×	2) 28-2-71			0.047µF (M) 450WV (CEE, UK)	24-8-6
				6-56x	EC286198	Δ Ceramic/C. AL-10	24-0-0
		OARD (B) BLOCK				0.01μF (Z) 125WV (CSA)	24-5-6
6-10		LED SY405T (Power)	45-15-24	6-57x	EJ314568	Fuse Holder	40-2-1
6-11	ED311857		45-15-25		EF242605	Δ Fuse (SEMKO T) 6.3AT(UK)	
6-1 2 X	EJ313596	Micro Connector Assy			EF306124	Δ Fuse 630mA 250V (U/T)	39-1-5 39-1-6
		C1205 (J1	8) 26-6-318		EF311839	Δ Fuse 1.6A 250V (U/T)	39-1-6
	TELED CO				EF691007	△ Fuse (SEMKO T) 3.15AT	23-1-6
	TEMP. CO	MPENSATION P.C BOARD BLO	CK				20.1.5
6-13x	ET635220	Transistor 2SC945L(K)(P) (TR	(1) 45-1-85	6-62x	EF303348	△ Fuse ST-6 6.3A (CSA)	39-1-5 39-1-6
5-14X	EJ313599	Micro Connector Assy			EF305703	△ Fuse 630mA 125V (CSA)	39-1-6
		C2208 (J20, 2	1) 26-6329	6-64x	EF308847	△ Fuse 1.6A 125V (CSA)	39-1-6
	HEAT ON	11 D. O. C. T.			EF300577	Δ Fuse (EAK) 5AT (CEE, UK)	39-1-5
5-15	HEAT SIN				EF668474	△ Fuse (SEMKO T) 400mAT	33-1-3
5-15 5-16	ET311847		AI 45-1-344			(CEE, UK)	39-1-5
	ET311846	Transistor 2SD551 (O)(R) AKA		6-67x	EF623103	△ Fuse (SEMKO T) 1AT	35-1-3
	EJ624486	Power TR. Socket	31-1-97			(CEE, UK)	39-1-5
-18	ZS344338	Screw, Pan 3x12		6-68x	EJ313598	Micro Connector Assy C1207(J1)	26-6-3
)-I YX	EJ313603	Mini Connector Assy			EJ313597	Micro Connector Assy C1206(J2)	26-6-3
20	E-1212404	C1103 (J10, 11) 26-6-325		EJ313591	Micro Connector Assy C1200(J2)	26-6-3
1-2UX	EJ313605	Mini Connector Assy		6-71x	EJ313592	Micro Connector Assy C1202(J4)	26-6-3
-210	EJ313604	C1105 (J13	1) 26-6-327		EJ313602	Mini Connector Assy C1102(J5,6)	26-6-3
	23313604	Mini Connector Assy		6-73x	EJ313600	Micro Connector Assy C1209(J7,8) 26-6-3
		C1104 (J12	26-6-326	6-74x	EJ313594	Micro Connector Assy C1203(J9)	26-6-31
	ASSEMBLY	RIOCK		6-75x	EJ313601	Mini Connector Assy C1101	26-6-32
-22		Tapping Screw, #2, 3x8 (BR)			EJ313606	Mini Connector Assy C1106	26-6-32
		W=8 (Black			EJ 31 3 5 9 5	Micro Connector Assy C1204	26-6-31
-23x	ZW668621	M4 Spring Washer (Black)	,		EW313609	Wire (A) Assy (320mm)	26-1-9
-24x	ZS608477	Screw, Pan 3x4			EW313610	Wire (B) Assy (180mm)	26-1-10
	ZS201778	Screw, Pan 4x8			EW313611	Wire (C) Assy (230mm)	26-1-11
	BT311859	△ Power Trans. PS-120MT-70		6-81 x	EW313612	Wire (D) Assy (280mm)	26-1-12
			10100	6-82x	ZS311746	Tapping Screw, #2, 3x8	
27x	BT311862	△ Power Trans. PS-120MT-30	38-4-688			(Countersunk) (Black)	PM-123
	1002				SP311644	Bottom Plate	
28x	BT311860	△ Power Trans. PS-120MT-40	38-4-690		ZW668621	M4 Spring Washer (Black)	
			10 4 600		ZS537006	Screw, Bind 4x8 (Black)	CA-601
29	ZW237857	(CEE, UK) Washer D4.1×10×1T	38-4-689		SA312465	Circular Foot (A) Part CA	-
30	ZW273914	Spring Washer, M4		6-87	ZS311747	Tapping Screw, #2, 4x8 (Pan)	
	ZW413188	Nut, #1, M4				(Black)	24-9-118
:	EC311688	Elect./C. 10000µF 71WV	24-10-130	6-88x	EC283375	MP/C 0.047µF(M) 250WV(U/T)	
	SP311640	Rear Panel (U-1) (U/T)	PM-1229			.,,	
	SP311641	Rear Panel (A-1) (CSA)	PM-1230				
		Rear Panel (E-1) (CEE)	PM-1230 PM-1232				
		Rear Panel (B-1) (UK)	PM-1232 PM-1233				
	EC283375	Δ MP/C. 0.047μF(M) 250WV	1000				
			24-9-118				
38x E	EC308528	△ Oil Paper/C. ECN-C4A	A-3-110				
		0.047µF(M) 450WV (CEE,UK)	24-8-6				
9x F	C286198	△ Ceramic/C. AL-10	0.0.4v				
	- 5001,0		23-5-69				
0 E	J312482	0.01µF(Z) 125WV (CSA) 4P Pin Jack					
			31-5-149				
		Tapping Screw, #2, 3x12 (BR)					
2 E	Z225145	(Black) Δ 2-Throw AC Outlet					
			21				
		(U/T, CSA)	31-1-166				
3x F	1296853	A 3P In let CM 2 (OPP 1110)	21 1 100				
	J296853 W311816	△ 3P In-let CM-3 (CEE, UK) △ Power Cord 125V 13A	31-1-199				

7. FINAL ASSEMBLY BLOCK



7. FINAL ASSEMBLY BLOCK

Ref. No.	Parts No.	Description	Schematic No.
7-1	BD311414	Front Panel Block Comp. PS-120M	
7-2x	BD311415	Front Panel Block Comp. PS-120M-BL	
7-3	SZ311647	Front Plate	PM-1237
7-4	SE311728	Power Lens	PC-2021
7-5	SE311652	Button Escutcheon	PM-1240
7-6x	ZG311653	Spring	PM-1241
7-7x	SB311650	Button	PM-1239
7-8x	SB311651	Button (BL)	PM-1239
7-9	SH311648	Cap	PM-1238
7-10x	SH311649	Cap (BL)	PM-1238
7-11	BC311654	Case	PM-1242
7-12x	BC312479	Case (BL)	PM-1242
7-13	ZS537006	Screw, Bind 4×8 (Black)	
7-14	SA311655	Foot	PM-1243
7-15x		Screw, Bind 4×10	
7-16	ML311731	Lever (A)	PC-2024
7-17x	ML311732	Lever (A-BL)	PC-2024
7-18	SK311735	Knob	PC-2026
7-19x	SK311736	Knob (BL)	PC-2026

III. MODEL PS-200M

1. RECOMMENDED SPARE PARTS LIST

Because, if the parts listed below are on hand, almost any repair can be accomplished, we suggest that you stock these Recommended Spare Parts Items.

Parts No.	Description	Note
BA311438	Filter P.C Board Comp. PS-120M	
BA312154	Main Amp P.C Board (L) Comp. PS-200M	
BA312158	Main Amp P.C Board (R) Comp. PS-200M	
BA312162	Meter P.C Board Comp. PS-200M	
BT312422	△ Power Trans. PS-200MT-30	(CSA)
BT312424	⚠ Power Trans. PS-200MT-40	(CEE, UK)
BT312425	△ Power Trans. PS-200MT-70	(U/T)
EC312459	Elect./C. 10000μF 90WV	
ED311856	LED SLP137B	
ED311794	LED SY405T	
ED311857	LED TLR114	
ED300924	Silicon Diode GP08D	
ED312449	Silicon Diode SS-5A	
ED312450	Silicon Diode SS-5AR	
ED311852	Silicon Diode 1S2471	
ED624903	Silicon Diode 1S2473	
ED490511	Varistor VD1222	
ED313705	Zener Diode RD-20E (C)	
ED311752	Zener Diode RD-22E (C)	
ED311864	Zener Diode RD-3.3E (C)	
ED308467	Zener Diode RD-4.7E (C)	
ED311853	Zener Diode RD-6.2E (C)	
EF303348	⚠ Fuse ST-6 6.3A	(CSA)
EF308847	△ Fuse 1.6A 125V	(CSA)
EF311839	⚠ Fuse 1.6A 250V	(U/T)
EF309391	⚠ Fuse 800mA 125V	(CSA)
EF309388	⚠ Fuse 800mA 250V	(U/T)
EF300577	⚠ Fuse (EAK) 5AT	(CEE, UK)
EF623103	△ Fuse (SEMKO T) 1AT	(CEE, UK)
EF593706	⚠ Fuse (SEMKO T) 500mAT	(CEE, UK)
EF242605	⚠ Fuse (SEMKO T) 6.3AT	(U/T)
EI311855	IC LB1405	(U/T)
EI308865	IC TA7318P	
EL311833	Lamp (Cord Type) 8V 300mA (200mm×2)	
EM312444	Meter KL-90G-100	
EP311858	Relay MSJ48D2-0Z	
ES311805	△ Lever SW. SY02-2 (U85DMU, C)	SW901 (U/T, CSA)
ES311806	△ Lever SW. V85DV	SW901 (CEE, UK)
ES311690	Push SW. J-K2014	
ET302465	FET 2SK117 (SPECIAL)	
ET311792	FET 2SK150 (GR) (Y)	

Parts No.	Description	Note
rans No.	Description	Note
ET557965	Transistor 2SA733 (Q) (R)	
ET311845	Transistor 2SA899 (B) (V)	
ET311844	Transistor 2SA949 (O) (Y) AKAI	
ET311791	Transistor 2SA968 (O) (Y)	
ET305463	Transistor 2SA970 (GR) (BL)	
ET312447	Transistor 2SB645 (O) (R)	
ET311865	Transistor 2SC1904 (B) (V)	
ET312485	Transistor 2SC2229 (O) (Y) AKAI	
ET311790	Transistor 2SC2238 (O) (Y)	
ET307195	Transistor 2SC2240 (GR) (BL)	
ET635220	Transistor 2SC945L (K) (P)	
ET300931	Transistor 2SD600K (E) (F)	
ET312446	Transistor 2SD665 (O) (R)	
EV310077	Semi-Fixed/Vol. (Solid) CR29R 1KB	
EV311836	Semi-Fixed/Vol. (Solid) CR29R 10KB	
EV311835	Semi-Fixed/Vol. (Solid) CR29R 2.2KB	
EV311838	Semi-Fixed/Vol. (Solid) CR29R 220 ohms (B)	
EV311834	Vol. V24L52PHN25KC 100KB	

2. MAIN AMP P.C BOARD (L) (PM-1201/1201S) BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Symbol No.	Parts No.	Description	Schematic
2-1	BA31215			2-R18,19	ER311663	Carbon/R. F 1/4W	No.
		Comp. PS-200M	PM-1201			68 ohms (J)	35-11-25
2-TR1,2	ET30246		45-12-16	2-R21	ER311668		35-11-25
2-TR3	ET31179		45-12-22	2-R22	ER311664	Carbon/R. F 1/4W	** ** ***
2-TR4to7	ET30719	5 Transistor				270 ohms (J)	35-11-25
		2SC2240 (GR) (BL)	45-1-302	2-R24,25	ER311668	Carbon/R. F 1/4W 1.8K(J)	
2-TR8,9	ET30546	3 Transistor		2-R27		Carbon/R. F 1/4W 1.8K(J)	35-11-25
		2SA970 (GR) (BL)	45-1-303		ER311667	Carbon/R. F 1/4W 1K (J)	35-11-25
2-TR10	ET31184		45-1-341	2-R28	ER311664	Carbon/R. F 1/4W	
2-TR11	ET31186					270 ohms (J)	35-11-25
				2-R29	ER 307196	Carbon/R. F 1/4W	
	15 ET635220					100 ohms (J)	35-11-25
2-TR16,1			45-1-124	2-R32,33	ER307196	Carbon/R. F 1/4W	
2-TR18	ET635220		45-1-85			100 ohms (J)	35-11-25
2-TR19	ET312485	Transistor 2SC2229(O)(Y))	2-R35	ER311667	Carbon/R. F 1/4W 1K (J)	
		AKAI	45-1-349	2-R37	ER311667	Carbon/R. F 1/4W 1K (J)	35-11-25
2-TR20	ET311844	Transistor 2SA949(O)(Y)		2-R38,39			35-11-25
		AKAI	45-1-340	2-130,39	ER312453	Metal Oxide Film/R. 3W	
2-TR21	ET311790			1		4.7K (J)	35-15-9
2-TR22	ET311791	Transistor 2SA968(O)(Y)		2-R40,41	ER308849	Carbon/R. F 1/4W	
2-TR23	ET305463	Transistor 23A 988(O)(1)	45-1-338	1		220 ohms (J)	35-11-25
2.11(23	£1303463			2-R42,43	ER310843	Carbon/R. F 1/4W	
2 TD24 2	r rrangia	2SA970 (GR) (BL)	45-1-303	1		680 ohms (J)	35-11-25
2-TR24,2:	5 ET307195			2-R47to50	ER311669	Carbon/R. F 1/4W	
		2SC2240 (GR) (BL)	45-1-302				25 11 25
2-TR26	ET305463	Transistor		2-R51	ER 308849	3.3K (J)	35-11-25
		2SA970 (GR) (BL)	45-1-303	2-131	EK300049	Carbon/R. F 1/4W	
2-TR27	ET307195		45 2 303			220 ohms (J)	35-11-25
		2SC2240 (GR) (BL)	45-1-302	2-R52	ER 307196	Carbon/R. F 1/4W	
2-TR28	ET305463	ZSCZZ40 (GR) (BL)	45-1-302			100 ohms (J)	35-11-25
2-11/20	21303403			2-R53,54	ER675112	Carbon/R. F 1/2W	
a TDaa		2SA970 (GR) (BL)	45-1-303			6.8 ohms (J)	35-11-13
2-TR29	ET311790		45-1-339	2-R55,56	ER311667	Carbon/R. F 1/4W 1K (J)	35-11-25
2-TR30	ET311791	Transistor 2SA968(O)(Y)	45-1-338	2-R57,58	ER439132	Metal Oxide Film/R. 2W	00 11 25
2-D1,2	ED624903	Silicon Diode 1S2473	45-3-28	1		150 ohms (K)	25 15 0
2-D3	ED311864	Zener Diode RD-3.3E(C)	45-6-72	2-R59to66	ER312414	Metal Plate/R, MPC71F1	35-15-8
2-D4to7	ED311852	Silicon Diode 1S2471	45-3-52	2-1351000	EK312414		
2-D8,9	ED624903		45-3-28	0.0000	ED 212404	5W 1 ohm (K)	35-16-48
2-D10,11	ED311852	Silicon Diode 1S2471	45-3-52	2-R67,68	ER312486	Metal Oxide Film/R. 2W	
2-D12to15		Zanas Diode 1324/1				4.7 ohms (K)	35-15-18
2-D16	ED312449	Zener Diode RD-3.3E(C)	45-6-72	2-R69,70	ER380856	Metal Oxide Film/R. 2W	
		Silicon Diode SS-5A	45-2-89			10 ohms (K)	35-15-8
2-D17	ED312450	Silicon Diode SS-5AR	45-2-90	2-R71,72	ER311665	Carbon/R. F 1/4W	
2-D18to21		Silicon Diode GP08D	45-2-68			560 ohms (J)	35-11-25
2-D23,24	ED311752	Zener Diode RD-22E(C)	45-6-72	2-R75,76	ER312451	Metal Oxide Film/R. 2W	55 11 25
2-D25to28	ED490511	Varistor VD1222	45-10-7	1		4.7K (J)	35-15-8
2-D29	ED308467	Zener Diode RD-4.7E(C)	45-6-72	2-R81,82	ER 308875	Carbon/R. F 1/2W	33-13-6
2-L1	EO551711	Phase Compensation Coil		2-101,02	ER300073		
		2.2µH (±30%)	23-1-188	2 DO2 04	FD 21 2000	10 ohms (J)	35-11-27
2-VR1	EV311838	Semi-Fixed/Vol. (Solid)	20 1 100	2-R83,84	ER313702	Metal Oxide Film/R. 2W	
	2.511030		20.00.0			3.3K (J)	35-15-8
2-VR2	EVALORE	CR29R 220 ohms (B)	36-28-6	2-2	ZS463353	Tapping Screw, #2,	
2-V K2	EV310077	Semi-Fixed/Vol. (Solid)		1		3×8 (BR) (Black)	
		CR29R 1KB	3 6 -28-6			, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
2-VR3,4	EV311836	Semi-Fixed/Vol. (Solid)					
		CR29R 10KB	36-28-6	1			
2-P2	EJ311841	Micro Connector W-P1 302	42-1-154	1			
2-P4	EJ311841	Micro Connector W-P1302	42-1-154	1			
2-P6	EJ207854	3P Plug. PC	42-I-96	1			
2-P8	EJ311843	Micro Connector W-P1 305	42-1-154	1			
2-P9	EJ311841	Micro Connector W-P1 302	42-1-154	I			
2-P11	EJ699355	6P Plug, PC		1			
2-P13			42-1-95	1			
2-P15	EJ699355	6P Plug, PC	42-1-95				
	EJ311840	2P Plug, W-P3002	42-1-152				
2-P17	EJ207854	3P Plug, PC	42-1-96				
2-P21	EJ311842	Micro Connector W-P1303	42-1-154	1			
2-R1	ER311751	Metal Film/R. 1/4W		1			
		100 ohms (F)	35-17-12				
2-R2	ER311672	Metal Film/R. 1/4W		1			
		150K (F)	35-17-12	I			
2-R5,6	ER311757	Metal Film/R. 1/4W	33-11-12	I			
2,0	-11311/3/			1			
2.07 0	FD 21	4.7K (F)	35-17-12	1			
2-R7,8	ER311671	Metal Film/R. 1/4W		1			
	_	1 80 ohms (F)	35-17-12			•	
2-R9,10	ER312324	Metal Film/R. 1/4W					
		68 ohms (F)	35-17-12	1			
2-R16,17	ER311668	Carbon/R. F 1/4W 1.8K(J)	35-11-25				
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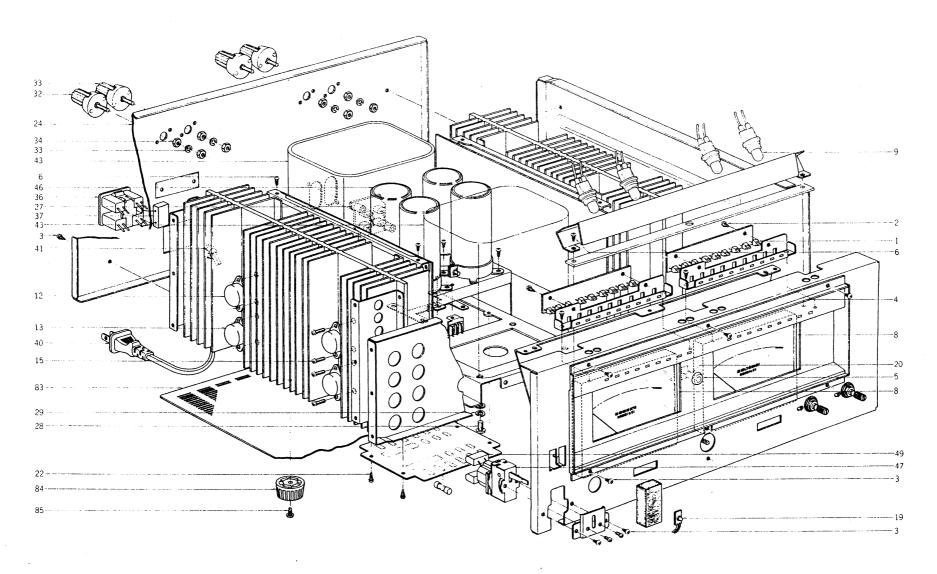
3. MAIN AMP P.C BOARD (R) (PM-1202/1202S) BLOCK

Symbol No.	Parts No.	Description	Schematic No.	Symbol No.	Parts No.	Description	Schematic No.
	BA312158	Main Amp P.C Board (R)		3-R2	ER311672	Metal Film/R. 1/4W 150K (F)	35-17-12
3-TR1,2	ET302465	Comp. PS-200M FET 2SK117 (SPECIAL)	PM-1202 45-12-16	3-R5,6	ER311757	Metal Film/R. 1/4W 4.7K (F)	35-17-12
3-TR3	ET311792 ET307195	FET 2SK150 (GR) (Y) Transistor	45-12-22	3-R7,8	ER311671	Metal Film/R. 1/4W	35-17-12
3-TR8.9	ET305463	2SC2240 (GR) (BL) Transistor	45-1-302	3-R9,10	ER 31 2324	180 ohms (F) Metal Film/R. 1/4W	
•		2SA970 (GR) (BL) Transistor 2SA899(B)(V)	45-1-303 45-1-341	3-R16,17	ER311668	68 ohms (F) Carbon/R. F 1/4W	35-17-12
3-TR10 3-TR11	ET311845 ET311865	Transistor 2SC1904(B)(V)	45-1-342			1.8K (J)	35-11-25
3-TR13to15		Transistor 2SC945L(K)(P)	45-1-85	3-R18,19	ER311663	Carbon/R. F 1/4W	35-11-25
	ET557965	Transistor 2SA733(Q)(R)	45-1-124			68 ohms (J) Carbon/R. F 1/4W	33-11-23
3-TR18	ET635220	Transistor 2SC945L(K)(P)	45-1-85	3-R21	ER311668	1.8K (J)	35-11-25
3-TR19	ET312485	Transistor 2SC2229(O)(Y)	45-1-349	3-R22	ER311664	Carbon/R. F 1/4W	
2 TD20	ET311844	AKAI Transistor 2SA949(O)(Y)	40-1-049	3-1022		270 ohms (J)	35-11-25
3-TR20	E1311044	AKAI	45-1-340	3-R24,25	ER311668	Carbon/R. F 1/4W	35-11-25
3-TR21	ET311790	Transistor 2SC2238(O)(Y)	45-1-339			1.8K (J)	
3-TR22	ET311791	Transistor 2SA968(O)(Y)	45-1-338	3-R27	ER311667	Carbon/R. F 1/4W 1K (J)	35-11-25
3-TR23	ET305463	Transistor		3-R28	ER311664	Carbon/R. F 1/4W	35-11-25
		2SA970 (GR) (BL)	45-1-303		ER 307196	270 ohms (J) Carbon/R. F 1/4W	33 11 23
3-TR24,25	ET307195	Transistor	45-1-302	3-R29	ER30/196	100 ohms (J)	35-11-25
	Eman 4443	2SC2240 (GR) (BL) Transistor	45-1-302	3-R32,33	ER307196	Carbon/R. F 1/4W	
3-TR26	ET305463	2SA970 (GR) (BL)	45-2-303	3 1102,00		100 ohms (J)	35-11-25
3-TR27	ET307195	Transistor		3-R35	ER311667	Carbon/R. F 1/4W 1K (J)	35-11-25
3-1 K2 /	E130/193	2SC2240 (GR) (BL)	45-1-302	3-R37	ER311667	Carbon/R. F 1/4W 1K (J)	35-11-25
3-TR28	ET305463	Transistor		3-R38,39	ER312453	Metal Oxide Film/R.	25 15 0
		2SA970 (GR) (BL)	45-1-303		ED 200840	3W 4.7K (J) Carbon/R. F 1/4W	35-15-9
3-TR29	ET311790	Transistor 2SC2238(O)(Y)	45-1-339	3-R40,41	ER308849	220 ohms (J)	35-11-25
3-TR30	ET311791	Transistor 2SA968(O)(Y)	45-1-338	2 042 42	ER310843	Carbon/R. F 1/4W	
3-TR31	ET557965	Transistor 2SA733(Q)(R)	45-1-124 45-1-85	3-R42,43	LK3100+3	680 ohms (J)	35-11-25
	ET635220	Transistor 2SC945L(K)(P)	45-1-85	3-R47to50	ER311669	Carbon/R. F 1/4W	
3-TR35	ET300931	Transistor 2SD600K(E)(F) Transistor	43-1-210	3-10-71000		3.3K (J)	35-11-2
3-TR36	ET307195	2SC2240 (GR) (BL)	45-1-302	3-R51	ER308849	Carbon/R. F 1/4W	
3-D1,2	ED624903	Silicon Diode 1S2473	45-3-28			220 ohms (J)	35-11-2
3-D1,2	ED311864	Zener Dioe RD-3.3E (C)	45-6-72	3-R52	ER307196	Carbon/R. F 1/4W	25.11.0
3-D4to7	ED311852	Silicon Diode 1S2471	45-3-52		nn	100 ohms (J)	35-11-2
3-D8,9	ED624903	Silicon Diode 1S2473	45-3-28	3-R53,54	ER675112	Carbon/R. F 1/2W 6.8 ohms (J)	35-11-1
3-D10,11	ED311852	Silicon Diode 1S2471	45-3-52	2 255 56	ER311667	Carbon/R. F 1/4W 1K (J)	35-11-2
3-D12to15	ED311864	Zener Diode RD-3.3E (C)	45-6-72 45-2-89	3-R55,56 3-R57,58	ER439132	Metal Oxide Film/R.	
3-D16	ED312449	Silicon Diode SS-5A	45-2-89	3-137,50	21(10)200	2W 150 ohms (K)	35-15-8
3-D17	ED312450	Silicon Diode SS-5AR Silicon Diode GP08D	45-2-68	3-R59to66	ER312414	Metal Plate/R. MPC71F1	
3-D18to22	ED300924 ED311752	Zener Diode RD-22E (C)	45-6-72	-		5W 1 ohm (K)	35-16-4
3-D23,24 3-D25to28	ED490511	Varistor VD1222	45-10-7	3-R67,68	ER312486	Metal Oxide Film/R.	
3-D231020	ED313705	Zener Diode RD-20E (C)	45-6-72			2W 4.7 ohms (K)	35-15-1
3-D30	ED308467	Zener Diode RD-4.7E (C)	45-6-72	3-R69,70	ER380856	Metal Oxide Film/R. 2W 10 ohms (K)	35-15-8
3-L1	EO551711	Phase Compensation Coil		2 0 0 0 0	ER311665	Carbon/R. F 1/4W	00 10 0
		2.2µH (±30%) Semi-Fixed/Vol. (Solid)	23-1-188	3-R71,72	EKSITOOS	560 ohms (J)	35-11-2
3-VR1	EV311838	CR29R 220 ohms (B)	36-28-6	3-R75,76	ER312451	Metal Oxide Film/R.	
3-VR2	EV310077	Semi-Fixed/Vol. (Solid)				2W 4.7K (J)	35-15-8
3-11/2	2.0100	CR29R 1KB	36-28-6	3-R89	ER311662	Carbon/R. F 1/4W	
3-VR3,4	EV311836	Semi-Fixed/Vol. (Solid)				22 ohms (J)	35-11-2
		CR29R 10KB	36-28-6	3-R95	ER 31 3798	Metal Oxide Film/R. 2W 1.5K (J)	35-15-8
3-RL1	EP311858	Relay MSJ48D2-0Z	47-1-38	a D. ca . ca	ER308875	Carbon/R. F 1/2W	33-10-0
3-P1	EJ311841	Micro Connector W-P1 302	42-1-154	3-R102,103	EK3000/3	10 ohms (J)	35-11-2
3-P3	EJ311841	Micro Connector W-P1302 3P Plug. PC	42-1-154 42-1-96	3-2	ZS463353	Tapping Screw, #2,	
3-P5	EJ207854	Micro Connector W-P1305	42-1-154	3-2		3×8 (BR) (Black)	
3-P7	EJ311843	6P Plug, PC	42-1-95				
3-P10	EJ699355	6P Plug, PC	42-1-95				
3-P12 · 3-P14	EJ699355 EJ311840	2P Plug, W-P3002	42-1-152				
3-P14 3-P16	EJ311840 EJ207854	3P Plug, PC	42-1-96				
3-P16 3-P18,19	EJ207834 EJ311841	Micro Connector W-P1302	42-1-154				
3-P10,19	EJ311842	Micro Connector W-P1 303	42-1-154	1			
3-C41	EC311689	NP/C. 330µF (M) 6.3WV	24-17-31				
3-C44	EC662128	Solid Aluminum/C.	94.10.0	1			
	ED 21155	(Vert.) 2.2µF (M) 25WV	24-19-2	1			
3-R1	ER311751	Metal Film/R. 1/4W 100 ohms (F)	35-17-12				
		100 onms (F)	JJ 11-14	I .			

4. FILTER P.C BOARD (PM-1203/1203S) BLOCK

5. METER P.C BOARD (PM-2001/2001S) BLOCK

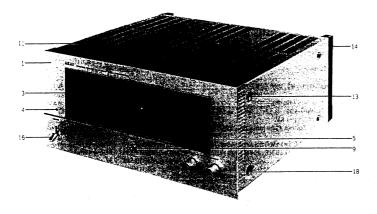
Symbol Symbol Description Parts No. Parts No. Description No. No. BA312162 Meter P.C Board Comp. 5-1 4-1 BA311438 Filter P.C Board Comp. PM-2001 PM-1203 PS-120M EI308865 IC TA7318P 5-IC1 45-8-306 4-TR1 ET307195 Transistor EI311855 IC LB1405 45-8-328 2SC2240 (GR) (BL) 45-1-302 5-IC2,3 ET311791 Transistor 2SA968(O)(Y) 45-1-338 5-TR1 ET305463 Transistor 4-TR2,3 ET557965 Transistor 2SA733(Q)(R) 45-1-124 2SA970 (GR) (BL) 45-1-303 5-TR2 ET307195 Transistor 5-TR3,4 4-TR4 ET307195 Transistor 2SC2240 (GR) (BL) 45-1-302 2SC2240 (GR) (BL) 45-1-302 EV311834 Vol. V24L52PHN25KC ED300924 Silicon Diode GP08D 5-D1,2 45-2-68 ED311853 Zener Diode RD-6.2E(C) 45-6-72 5-D3 100KB 5-D4 ED624903 Silicon Diode 1S2473 45-3-28 ES311690 Push SW. J-K2014 25-5-312 4-SW1 EV310077 Semi-Fixed/Vol. (Solid) EC311779 NP/C. 2.2µF 50WV 5-VR1 4-C2 CR29R 1KB 36-28-6 ZS608477 Screw, Pan 3x4 4-2 5-VR2 EV311835 Semi-Fixed/Vol. (Solid) CR29R 2.2KB 36-28-6 ER453565 Metal Oxide Film/R. 5-R1,2 2W 1.2K (J) 35-15-8 ER293635 Fuse/R. FRN158 1/4W 5-FR1 10 ohms (J) 700 mA 35-14-20



6	22	FN	(R	ľ	BL	O	CK

6. A	SEMBLI	BLOCK					
Ref. No.	Parts No.	Description	Schematic No.	Ref. No.	Parts No.	Description	Schematic No.
	LED P.C BO	ARD (C) BLOCK		6-46 6-47	EC312459 ES311805	Elect./C. 10000µF 90WV Δ Lever SW. SY02-2	24-10-131
6-1	ED311856	LED SLP137B	45-15-23	6-47	E3311003	(U85DMU, C) (U/T, CSA)	25-12-48
6-2	ZS447761	Tapping Screw, #2, 3x6 (BR)		6 4 9 2	ES311806	△ Lever SW. V85DV (CEE,UK)	25-12-50
		(Black)		6-49	EC283375	Δ MP/C. 0.047μF (M)	
		. core pr core		0-47	LC203370	250WV (U/T)	24-9-118
	FRONT CH	ASSIS BLOCK		6.50*	EC286198	△ Ceramic/C. AL-10	
6-3	ZS308846	Tapping Screw, #2, 3x8 (BR)		6-30A	EC100170	0.01µF (Z) 125WV (CSA)	24-5-69
		(Oval Neck)	7-1-69 PM-2006/2007	6.61	EC308528	△ Oil Paper/C. ECN-C4A	
6-4		Meter Plate	PM-2006/2007 PM-1217	0-312	Descours	0.047µF (M) 450WV (CEE, UK)	24-8-6
6-5	MH311627	Collar	L IM-1911	6-52*	EJ314568	Fuse Holder (UK)	40 15
6-6	ZS463353	Tapping Screw, #2, 3×8 (BR) (Black)			EF242605	A Fuse (SEMKO T) 6.3AT(UK)	39-1-55
		Screw, Pan 3x6 (Black)			EC286198	Ceramic/C. AL-10 0.01 µF (Z)	
6-7x	ZS355522 EM312444	Meter KL-90G-100	46-2-24	1		125WV (CSA)	24-5-69
6-8 6-9	EL311833	Lamp (Cord Type) 8V		6-55x	EC308528	Oil Paper/C. ECN-C4A	
6-9	EL311633	300mA (200mm×2)	28-2-71			0.047µF (M) 450WV (CEE, UK)	24-8 -6
		3001131 (2001111112)		6-56x	EJ313598	Micro Connector Assy C1207(J1)	2 6-6- 320
	TEMP COL	MPENSATION P.C BOARD BLOCK		6-57x	EJ313597	Micro Connector Assy C1206(J2)	26-6-319
	ET635220	Transistor 2SC945L(K)(P) (TR1)		6-58x	EJ313591	Micro Connector Assy C1201(J3)	26-6-314
	EJ313607	Micro Connector Assy			EJ313592	Micro Connector Assy C1202(J4)	2 6-6- 315
0-11X	L3313007	C2208 (J20, 21)	2 6-6 -329	6-60x	EJ313602	Mini Connector Assy C1102(J5,6)	2 6-6- 324
		00000 (111,117,		6-61x	EJ313600	Micro Connector Assy	
	HEAT SIN	K BLOCK		į.		C1209(J7,8)	26-6-322
6-12	ET312446	Transistor 2SD665 (O) (R)	45-1-345	6-62x	EJ313594	Micro Connector Assy C1203(J9)	26-6-316
6-13	ET312447	Transistor 2SB645 (O) (R)	45-1-346	6-63x	EJ313601	Mini Connector Assy	
	EJ624486	Power TR. Socket	31-1-97	1		C1101 (J14,15)	2 6- 6-323
6-15	ZS608501	Screw, Pan 3×12		6-64x	EJ313606	Mini Connector Assy	
6-16x	EJ313603	Mini Connector Assy		1		C1106 (J16,17)	26- 6 -328
•		C1103 (J10, 11)	26 -6- 325	6-65x	EJ313595	Micro Connector Assy	
6-17x	EJ313605	Mini Connector Assy		1		C1204 (J19)	26-6-317
		C1105 (J13)	26-6-327		EW313609	Wire (A) Assy (320mm)	26-1-9 26-1-10
6-18x	EJ313604	Mini Connector Assy			EW313610	Wire (B) Assy (180mm)	26-1-10
		C1104 (J12)	2 6-6- 326		EW313611	Wire (C) Assy (230mm)	26-1-11
					EW313613	Wire (E) Assy (230mm) △ Fuse 800mA 250V. (U/T)	39-1-64
		OARD (B) BLOCK			EF309388	Δ Fuse 1.6A 250V (U/T)	39-1-64
6-19	ED311794	LED SY405T (Power)	45-15-24		EF311839	△ Fuse (SEMKO T) 6.3AT(U/T)	39-1-53
6-20	ED311857		45-15-25		EF242605		39-1-63
6-21x	EJ313596	Micro Connector Assy			EF303348	△ Fuse ST-6 6.3A (CSA) △ Fuse 800mA 125V (CSA)	39-1-65
		C1205 (J18)	26-6-318		EF309391	△ Fuse 1.6A 125V (CSA)	39-1-65
6-22	ZS311745	Tapping Screw, #2, 3×8 (BR)			EF308847	△ Fuse ST-6 6.3A (CSA)	39-1-63
		W=8 (Black)		6-76X	EF303348 EF309391	△ Fuse 800mA 125V (CSA)	39-1-65
	ZS608477	Screw, Pan 3x4	PM-2010	6-778	EF308847	△ Fuse 1.6A 125V (CSA)	39-1-65
6-24	SP312437	Rear Panel (U-2) (U/T)	PM-2010 PM-2011		EF300577	Δ Fuse (EAK) 5AT (CEE, UK)	39-1-59
	SP312438	Rear Panel (C, A-2) (CSA)	PM-2011 PM-2013		EF593706	△ Fuse (SEMKO T) 500mAT	••••
	SP312439	Rear Panel (E-2) (CEE)	PM-2014	6-80%	. 21373700	(CEE, UK)	39-1-53
	SP312440	Rear Panel (B-2) (UK)	1 M-2014	4.91	EF623103	△ Fuse (SEMKO T) 1AT	
6-28	ZS201778	Screw, Pan 4×8		0.017	DIOLOIGO	(CEE, UK)	39-1-53
6-29	ZW668621		31-5-149	6.823	ZS311746	Tapping Screw, #2, 3x8	
6-30	EJ312482	4P Pin Jack		0-027		(Countersunk) (Black)	
6-31 x	ZS522865	Tapping Screw, #2, 3×12 (BR) (Black)		6-83	SP311644	Bottom Plate	PM-1234
	F12.1.		32-1-99	6-84	SA312465	Circular Foot (A) Part CA	CA-6014
6-32	EJ311695	Terminal T5689-A Terminal T5689-B	32-1-102	6-85	ZS311747	Tapping Screw, #2, 4×8 (Pan)	
6-33	EJ311696 ZW273914					(Black)	
6-34				6-86>	EC283375	MP/C. 0.047µF(M) 250WV(U/T)	24-9-118
6-35 6-36	ZW413188 EZ225145						
0-30	LLIZITAS	(U/T, CSA)	31-1-166	1			
6-37	EC283375	Δ MP/C. 0.047μF (M)		-			
0-37	EC263373	250WV (U/T)	24-9-118				
6.38	EC286198			- 1			
0 502	. 20200170	0.01μF (Z) 125WV (CSA)	24-5-69				
6-39)	EC308528	A Oil Paper/C. ECN-C4A		-			
0 0 7 7		0.047µF (M) 450WV (CEE, UK)	24-8-6	1			
6-40	EW311816						
0 .0		(U/T, CSA)	26-3-75	1			
6-41	EZ631945						
0 /1	32001740	(U/T, CSA)	2-7-49				
6-42	EJ296853	△ 3P In-let CM-3 (CEE, UK)	31-1-199				
6-43	BT312425						
•		(U/T)	38-4-694	1			
6-44:	BT312422	△ Power Trans. PS-200MT-30					
		(CSA)	38-4-692	1			
6-45)	BT312424	△ Power Trans. PS-200MT-40					
		(CEE, UK)	38-4-693	I			

7. FINAL ASSEMBLY BLOCK



7. FINAL ASSEMBLY BLOCK

Ref.	Parts No.	Description	Schematic No.
7-1	BD312146	Front Panel Block Comp. PS-200M	
7-2 x	BD312147	Front Panel Block Comp. PS-200M-BL	
7-3	SZ311647	Front Plate	PM-1237
7-4	SE311728	Power Lens	PC-2021
7-5	SE311652	Button Escutcheon	PM-1240
7-6x	ZG311653	Spring	PM-1241
7-7x	SB311650	Button	PM-1239
7-8x	SB311651	Button (BL)	PM-1239
7-9	SH311648	Cap	PM-1238
7-10x	SH311649	Cap (BL)	PM-1238
7-11	BC311654	Case	PM-1242
7-12x	BC312479	Case (BL)	PM-1242
7-13	ZS537006	Screw, Bind 4x8 (Black)	
7-14	SA311655	Foot	PM-1243
7-15x	ZS608635	Screw, Pan 4×10	
7-16	ML311731	Lever (A)	PC-2024
7-17x	ML311732	Lever (A-BL)	PC-2024
7-18	SK311735	Knob	PC-2026
7-19x	SK311736	Knob (BL)	PC-2026

-When ordering parts, please describe Parts Number, Description, and Model Number in detail.

1. PS-200C

INDEX

Parts No. Ref. No. & Symbol No.	Parts No. Ref. No. & Symbol No.	Parts No. Ref. No. & Symbol No.	Parts No. Ref. No. & Symbol No.
BA311370 3-1 BA313970 2-1 BC311730 8-9 BC312332 8-10x BD313972 8-1x BD313973 8-2x BT311809 7-4x BT311810 7-5x BT311811 7-3 EC283375 7-13	ER311764 2-R83 ER311765 2-R84 ER311766 2-R85 ER311767 2-R86 ER311768 2-R87 ER311772 2-R31 ER311773 2-R63 ER311774 4-R1 ER311774 5-R1 ER311775 5-R2	SK311739 8-20 SK311740 8-21x SP311718 7-22 SP311719 7-23x SP311720 7-24x SP311721 7-25x SP311722 7-52 TA311726 8-3 TA311727 8-4x TA646773 7-19	
EC283375 7-38 EC286198 7-14x EC286198 7-36x EC301320 7-35x EC301320 7-35x EC301320 7-37x EC311778 2-C49 EC311780 2-C23 EC311780 2-C23	ER311875 2-R28,29 ER311876 4-R7 ER312460 3-R7 ER312461 2-R5,6 ER483287 3-R29 ES246227 5-SW1 ES311797 3-SW1 ES311797 3-SW1 ES311798 2-SW1 ES311799 2-SW2	ZG312478 8-8x ZS201778 7-9x ZS308846 7-1 ZS311745 7-717x ZS311746 7-51x ZS311747 7-54 ZS411232 8-13x ZS421740 2-2 ZS421740 3-2 ZS463353 7-34x	
EC311780 2-C50 EC311780 2-C51 EC311780 4-C5 EC311781 2-C30 EC311782 2-C35 EC311782 2-C35 EC311787 2-C18 EC311787 2-C18 EC311787 2-C18 EC311788 2-C17 EC312462 2-C16 EC427228 7-40x	ES311802 4-SW1 ES311803 4-SW2 ES311801 2-SW3 ES664222 7-11 ES665807 7-12x ET300931 2-TR17 ET300931 3-TR9 ET300931 3-TR11 ET300931 4-TR2 ET301165 2-TR18	ZS522865 7-30x ZS537006 7-6 ZS537006 8-11 ZS608185 7-31 ZS608477 7-2 ZW270123 7-21 ZW273914 7-8 ZW312470 7-26x ZW312471 7-27x ZW312471 7-27x ZW312472 7-28x	
EC427228 7-41x EC427228 7-42x EC662128 4-C2 ED145430 3-D1to5 ED311752 3-D8 ED311794 6-D1 ED311853 4-D1 ED490511 2-D1 ED490511 2-D5.6 ED490511 2-D5.6	ET301165 3-TR10 ET302465 2-TR3,9 ET302465 2-TR21t024 ET305463 2-TR1 ET305463 2-TR3 ET305463 2-TR6 ET305463 2-TR13 ET305463 2-TR16 ET305463 2-TR18 ET305463 2-TR28 ET305463 2-TR31	ZW312473 7-29x ZW322110 7-20 ZW413188 7-7 ZW413188 7-10x	
ED490511 3-D6,7 ED490511 3-D9 ED624903 2-D2to4 ED624903 2-D7to9 EF300596 7-50x EF300598 7-49x EF306125 7-46 EF309388 7-48 EF309388 7-45 EF309388 7-45	ET305463 2-TR33,34 ET305463 3-TR1 ET305463 3-TR6 ET305463 3-TR8 ET307195 2-TR2 ET307195 2-TR10to12 ET307195 2-TR14,15 ET307195 2-TR25to27 ET307195 2-TR25to27 ET307195 2-TR279,30		
E1311789 3-IC1 E1293365 4-J3,4 E1293376 4-J2 E1296853 7-33x E1311808 7-16 E1311812 7-39 E1312463 4-J1 EJ312464 4-J5 EP249344 2-RL1 EP249344 4-RL1	ET307195 2-TR32 ET307195 2-TR35 ET307195 3-TR2 ET307195 3-TR2 ET307195 3-TR7 ET311790 3-TR7 ET311790 3-TR3 ET311791 3-TR4 ET311792 2-TR7 ET635220 4-TR1 EV311795 2-VR1		
ER307196 2-R76,77 ER307196 2-R102,103 ER308849 2-R75 ER310323 2-R1 ER310324 2-R55 ER310326 2-R105 ER310326 2-R105 ER310436 2-R82 ER311748 3-R12,13 ER311751 2-R2	EV311796 2-VR2 EV311796 2-VR3 EV312338 3-VR1 EV315600 2-VR1 EV618052 2-VR4 EW311816 7-43 EZ225145 7-32 EZ631945 7-44 ML311733 8-14 ML311734 8-15x		
ER311753 2-R40 ER311754 2-R41 ER311755 2-R46,47 ER311757 2-R51 ER311757 2-R51 ER311759 2-R52 ER311760 2-R53 ER311761 2-R54 ER311760 2-R80 ER311763 2-R81	MS311709 7-18 SA311714 8-12 SA311714 8-12 SA311742 7-53 SB312474 8-6 SB312475 8-7x SE311728 8-5 SK311736 8-17x SK311737 8-18 SK311737 8-18 SK311737 8-19x		

2. PS-120M

INDEX

	Ref. No. &	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
	Symbol No.	EJ311843	2-P8	ER311751	2-R1	EV311838	3-VR1
BA311432 BA311436	2-1 3-1	EJ311843 EJ311843	3-P7	ER311751	3-R1	EW311816	6-44
BA311438	4-1	EJ312482	6-40	ER311757	2-R5,6	EW313609 EW313610	6-78x 6-79x
BA311440	5-1	EJ313591 EJ313592	6-70x 6-71x	ER311757 ER312324	3-R5,6 2-R9,10	EW313610 EW313611	6-80x
BC311654 BC312479	7-11 7-12x	EJ313594	6-74x	ER312324	3-R9,10	EW313612	6-81x
BD311414	7-1	EJ313595	6-77x	ER312483	5-R1,2	EZ225145 EZ631945	6-42 6-45
BD311415	7-2x	EJ313596 EJ313597	6-12x 6-69x	ER312486 ER312486	2-R67,68 3-R67,68	MH311627	6-5
BT311859 BT311860	6-26 6-28x	EJ313598	6-68x	ER312487	2-R83,84	ML311629	6-4
BT311862	6-27x	EJ313599	6-14x	ER380856	2-R69,70	ML311731 ML311732	7-16 7-17x
EC283375 EC283375	6-37 6-54	EJ313600 EJ313601	6-73x 6-75x	ER380856 ER439132	3-R69,70 2-R57,58	SA311655	7-14
EC283375	6-88x	EJ313602	6-72x	ER439132	3-R57,58	SA312465	6-86
EC286198	6-39x	EJ313603	6-19x	ER622978	2-R59to62	SB311650 SB311651	7-7x 7-8x
EC286198 EC286198	6-49x 6-56x	EJ313604 EJ313605	6-21x 6-20x	ER622978 ES311690	3-R59to62 4-SW1	SE311652	7-5
EC308528	6-38x	EJ313606	6-76x	ES311805	6-52	SE311728	7-4
EC308528	6-48x	EJ314568	6-57x	ES311806	6-53x	SH311648 SH311649	7-9 7-10x
EC308528	6-55x	EJ624486	6-17x	ET300931	3-TR35	SK311735	7-18
EC311688 EC311689	6-32 3-C41	EJ699355 EJ699355	2-P11 2-P13	ET302465 ET302465	2-TR1,2 3-TR1,2	SK311736	7-19x
EC311779	3-C41 4-C2	EJ699355	3-P10	ET305463	2-TR8,9	SP311640	6-33
EC662128	3-C44	EJ699355	3-P12	ET305463	2-TR23	SP311641	6-34x 6-35x
ED300924	2-D18to21	EL311833	6-9	ET305463	2-TR26 2-TR28	SP311642 SP311643	6-35 X 6-36 X
ED300924 ED300924	3-D18to22 5-D1,2	EM311863 EO551711	6-7 2-L1	ET305463 ET305463	3-TR8,9	SP311644	6-83
ED300924 ED311752	2-D23,24	EO551711	3-L1	ET305463	3-TR23	SZ311647	7-3
ED311752	3-D23,24	EP311858	3-RL1	ET305463	3-TR26 3-TR28	ZG311653 ZS201778	7-6x 6-25x
ED311794	6-10	ER293635	5-FR1	ET305463	3-1R28 4-TR2,3	ZS308846	6-3
ED311849	2-D16 3-D16	ER307196 ER307196	2-R29 2-R32.33	ET305463 ET307195	4-1 K2,3 2-TR4to7	ZS311745	6-22
ED311849 ED311851	3-D16 2-D17	ER307196	3-R29	ET307195	2-TR24,25	ZS311746	6-82x
ED311851	3-D17	ER307196	3-R32,33	ET307195	2-TR27	ZS311747 ZS312349	6-87 6-51x
ED311852	2-D4to7	ER308849 ER308849	2-R40,41 3-R40,41	ET307195 ET307195	3-TR4to7 3-TR24,25	ZS312349 ZS344338	6-51X 6-18
ED311852 ED311852	2-D10,11 3-D4to7	ER308849 ER308875	3-R40,41 2-R81,82	ET307195	3-TR27	ZS355522	6-8 x
ED311852	3-D10,11	ER308875	3-R102,103	ET307195	3-TR36	ZS411232	7-15x
ED311853 ED311854	5-D3 3-D29	ER309092 ER310147	3-R95 2-R53,54	ET307195 ET307195	4-TR1 4-TR4	ZS447761 ZS463353	6-2 2-2
ED311856	6-1	ER310147	3-R53,54	ET307195	5-TR3,4	ZS463353 ZS463353	3-2 6-6
ED311857	6-11 2-D12to15	ER310843 ER310843	2-R42,43 3-R42.43	ET311790 ET311790	2-TR21 2-TR29	ZS522865	6-41x
ED311864 ED311864	2-D12to15 3-D12to15	ER311662	2-R51,52	ET311790	3-TR21	ZS537006	6-85x
ED490511	2-D25,26	ER311662	3-R51,52	ET311790	3-TR29	ZS537006 ZS608477	7-13 4-2
ED490511	3-D25,26	ER311662	3-R89 2-R18,19	ET311791	2-TR22 2-TR30	ZS608477 ZS608477	4-2 6-24x
ED624903 ED624903	2-D1,2 2-D8,9	ER311663 ER311663	3-R18,19	ET311791 ET311791	3-TR22	ZS608477	6-50x
ED624903	3-D1,2	ER311664	2-R22	ET311791	3-TR30	ZW23785	6-29
ED624903	3-D8,9	ER311664	2-R28	ET311791	5-TR1	ZW273914 ZW413188	
ED624903	5-D4	ER311664 ER311664	3-R22 3-R28	ET311792 ET311792	2-TR3 3-TR3	ZW413188	
EF242605 EF300577	6-58x 6-65x	ER311665	2-R71,72	ET311792	2-TR20	ZW66862	6-84x
EF303348	6-62x	ER311665	3-R71,72	ET311844	3-TR20		
EF305703	6-63x	ER311667	2-R27 2-R35	ET311845			
EF306124 EF308847	6-59x 6-64x	ER311667 ER311667	2-R35 2-R37	ET311845 ET311846			
EF311839	6-60x	ER311667	2-R55,56	ET311847	6-15		
EF623103	6-67x	ER311667	3-R27	ET311865	2-TR11		
EF668474	6-66x	ER311667	3-R35	ET311865			
EF691007 EI308865	6-61x 5-IC1	ER311667 ER311667	3-R37 3-R55.56	ET312485 ET312485			
EI308865	5-IC1 5-IC2	ER311668	2-R16,17	ET557965	2-TR16,17		
EJ207854	2-P6	ER311668	2-R21	ET557965	3-TR16,17		
EJ207854	2-P17	ER311668	2-R23 2-R25	ET557965			
EJ207854 EJ207854	3-P5 3-P16	ER311668 ER311668	2-R25 3-R16,17	ET557965 ET635220		1	
EJ296853	6-43x	ER311668	3-R21	ET635220	2-TR18	1	
EJ311695	6-46	ER311668	3-R23	ET635220	3-TR13to15		
EJ311696	6-47	ER311668		ET635220			
EJ311840	2-P15	ER311669		ET635220			
EJ311840 EJ311841	3-P14 2-P2	ER311669 ER311671		EV31007	7 2-VR2		
EJ311841	2-P4	ER311671	3-R7,8	EV310077	7 3-VR2	1	
EJ311841	2-P9	ER311672	2-R2 3-R2	EV310077 EV311834	7 5-VR1 1 4-VR1	1	
EJ311841 EJ311841	3-P1 3-P3	ER311672 ER311673		EV311832			
EJ311841 EJ311841	3-P3 3-P18,19	ER311673		EV31183	5 2-VR3,4		
EJ311842	2-P21	ER311683	2-R38,39	EV31183	5 3-VR3,4		
EJ311842	3-P20	ER311683		EV31183	3 2-VR1		

3. PS-200M

INDEX

Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.	Parts No.	Ref. No. & Symbol No.
BA311438	4-1	EJ311841	2-P4	ER311751	2-R1	EV310077	3-VR2
BA312154	2-1	EJ311841	2-P9	ER311751	3-R1	EV310077	5-VR1
BA312158	3-1	EJ311841	3-P1	ER311757	2-R5,6	EV311834	4-VR1
BA312162 BC311654	5-1 7-11	EJ311841 EJ311841	3-P3 3-P18,19	ER311757	3-R5,6	EV311835	5-VR2
BC312479	7-12x	EJ311841	2-P21	ER312324 ER312324	2-R9,10 3-R9,10	EV311836 EV311836	2-VR3,4
BD312146	7-1	EJ311842	3-P20	ER312414	2-R59to66	EV311838	3-VR3,4 2-VR1
BD312147	7-2x	EJ311843	2-P8	ER312414	3-R59to66	EV311838	3-VR1
BT312422 BT312424	6-44x 6-45x	EJ311843	3-P7	ER312451	2-R75,76	EW311816	6-40
D1312424	0-45X	EJ312482	6-30	ER312451	3-R75,76	EW313609	6-66x
BT312425	6-43	EJ313591	6-58x	ER312453	2-R38,39	EW313610	6-67x
EC283375 EC283375	6-37 6-49	EJ313592 EJ313594	6-59x 6-62x	ER312453	3-R38,39	EW313611	6-68x
EC283375	6-86x	EJ313594	6-65x	ER312486 ER312486	2-R67,68 3-R67,68	EW313613 EZ225145	6-69x
EC286198	6-38x	EJ313596	6-21x	ER313702	2-R83,84	EZ631945	6-36 6-41
EC286198	6-50 x	EJ313597	6-57x	ER313798	3-R95	MH311627	6-5
EC286198 EC308528	6-54x 6-39x	EJ313598	6-56x	ER380856	2-R69,70	ML311731	7-16
EC308528	6-51x	EJ313600 EJ313601	6-61x 6-63x	ER380856 ER439132	3-R69,70	ML311732	7-17x
EC308528	6-55x	EJ313602	6-60x	ER439132	2-R57,58 3-R57,58	ML312430 SA311655	6-4 7-14
FC211600	2.041	Flatacea					
EC311689 EC311779	3-C41 4-C2	EJ313603 EJ313604	6-16x 6-18x	ER453565 ER675112	5-R1,2 2-R53,54	SA312465	6-84
EC312459	6-46	EJ313605	6-17x	ER675112	2-R53,54 3-R53,54	SB311650 SB311651	7-7x 7-8x
EC662128	3-C44	EJ313606	6-64x	ES311690	4-SW1	SE311652	7-6x 7-5
ED300924 ED300924	2-D18to21	EJ313607	6-11x	ES311805	6-47	SE311728	7-4
ED300924 ED300924	3-D18to22 5-D1,2	EJ314568	6-52x	ES311806	6-48x	SH311648	7-9
ED300924	2-D29	EJ624486 EJ699355	6-14x 2-P11	ET300931	3-TR35	SH311649	7-10x
ED308467	3-D30	EJ699355	2-P11 2-P13	ET302465 ET302465	2-TR1,2 3-TR1,2	SK311735 SK311736	7-18
ED311752	2-D23,24	EJ699355	3-P10	ET305463	2-TR8,9	SP311644	7-19x 6-83
ED311752	3-D23,24	EJ699355	3-P12	ETACEACA	2 TD22		
ED311794	6-19	EL311833	6-9	ET305463 ET305463	2-TR23 2-TR26	SP312437 SP312438	6-24 6-25x
	2-D4to7	EM312444	6-8	ET305463	2-TR28	SP312439	6-26x
ED311852	2-D10,11	EO551711	2-L1	ET305463	3-TR8,9	SP312440	6-27x
ED311852 ED311852	3-D4to7 3-D10,11	E0551711	3-L1	ET305463	3-TR23	SZ311647	7-3
	5-D10,11	EP311858 ER293635	3-RL1 5-FR1	ET305463 ET305463	3-TR26 3-TR28	ZG311653	7-6x
ED311856	6-1	ER307196	2-R29	ET305463	4-TR2,3	ZS201778 ZS308846	6-28 6-3
	6-20	ER307196	2-R32,33	ET307195	2-TR4to7	ZS311745	6-22
ED311864	2-D3	ER307196	2-R52	ET307195	2-TR24,25	ZS311746	6-82x
ED311864	2-D12to15	ER307196	3-R29	ET307195	2-TR27	ZS311747	6-85
ED311864	3-D3	ER307196	3-R32,33	ET307195	3-TR4to7	ZS355522	6-7x
	3-D12to15 2-D16	ER307196	3-R52	ET307195	3-TR24,25	ZS447761	6-2
	3-D16	ER308849 ER308849	2-R40,41 2-R51	ET307195	3-TR27	ZS463353	2-2
ED312450	2-D17	ER308849	3-R40,41	ET307195 ET307195	3-TR36 4-TR1	ZS463353 ZS463353	3-2 6-6
ED312450	3-D17	ER308849	3-R51	ET307195	4-TR4	ZS522865	6-31x
	3-D29	ER308875	2-R81,82	ET307195	5-TR3,4	ZS537006	7-13
	2-D25to28 3-D25to28	ER308875 ER310843	3-R102,103 2-R42,43	ET311790 ET311790	2-TR21 2-TR29	ZS608477	4-2
			,	E1311/90	2-1 K29	ZS608477	6-23x
ED624903 ED624903	2-D1,2 2-D8,9	ER310843	3-R42,43	ET311790	3-TR21	ZS608501	6-15
	3-D1,2	ER311662 ER311663	3-R89 2-R18,19	ET311790	3-TR29	ZS608635	7-15x
ED624903	3-D8,9	ER311663	3-R18,19	ET311791 ET311791	2-TR22 2-TR30	ZW273914 ZW413188	6-34 6-35
ED624903	5-D4	ER311664	2-R22	ET311791	3-TR22	ZW413188 ZW668621	6-35 6-29
	6-53x	ER311664	2-R28	ET311791	3-TR30		/
	6-72x 6-79x	ER311664	3-R22	ET311791	5-TR1		
	6-73x	ER311664 ER311665	3-R28 2-R71,72	ET311792 ET311792	2-TR3 3-TR3		
	6-76x	ER311665	3-R71,72	ET311792 ET311844	3-1 R3 2-TR20		
EF308847	6-75x						
	6-78x	ER311667 ER311667	2-R27 2-R35	ET311844 ET311845	3-TR20 2-TR10		
EF309388	6-70x		2-R35 2-R37	ET311845 ET311845	2-TR10 3-TR10		
EF309391	5-74x	ER311667	2-R55,56	ET311865	2-TR11		
	5-77x	ER311667	3-R27	ET311865	3-TR11		
	5-71x 5-80x	ER311667 ER311667	3-R35 3-R37	ET312446	6-12		
	5-81x		3-R37 3-R55,56	ET312447 ET312485	6-13 2-TR19		
EI308865 5	S-IC1		2-R16,17	ET312485	3-TR19		
EI311855 5	5-IC2,3		2-R21	ET557965	2-TR16,17		
EJ207854 2	-P6	ER311668	2-R24,25	ETESTASS	2.TP16.17		
EJ207854 2	P17		2-R24,25 3-R16,17	ET557965 ET557965	3-TR16,17 3-TR31		
EJ207854 3	3-P5	ER311668	3-R21	ET557965	5-TR2		
EJ207854 3	I-P16	ER311668	3-R24,25	ET635220	2-TR13to15		
	-42x 32	ER311669	2-R47to50	ET635220	2-TR18		l
	-33		3-R47to50 2-R7,8	ET635220	3-TR13to15 3-TR18		
EJ311696 6							
EJ311840 2	P15	ER311671 ER311671	3-R7,8	ET635220 ET635220			
EJ311840 2 EJ311840 3		ER311671 ER311672	3-R7,8 2-R2 3-R2	ET635220 ET635220 ET635220 EV310077	3-TR32to34 6-10x 2-VR2		

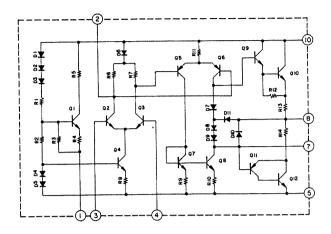
SECTION 3

SCHEMATIC DIAGRAM

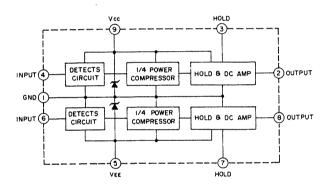
- 1. PS-200C NO. 4-1 1580852A SCHEMATIC DIAGRAM
- 2. PS-200C NO. 4-2 1580853A SCHEMATIC DIAGRAM
- 3. PS-120M NO. 4-3 1580854A SCHEMATIC DIAGRAM
- 4. PS-200M NO. 4-4 1580855A SCHEMATIC DIAGRAM

86

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